

# Rock Products

DEVOTED TO THE PRODUCTION  
AND SALE OF ROCK AND CLAY PRODUCTS.

Vol. 1.

LOUISVILLE, KY., MARCH, 1903.

No. 12.

## CLAY-WORKERS MEET.

**Seventeenth Annual Convention of the National  
Brick Manufacturers' Association,  
Boston, Mass., Feb. 2-14.**

The National Brick Manufacturers' Association invaded New England the past month by holding its annual convention at Boston, Mass., February 2 to 14, and the invasion will long be remembered by all the visiting delegates, because it marked what was conceded to be the greatest convention of brick men in the world. The attendance was large, reaching in the neighborhood of the 400 mark, counting the ladies, of which there were virtually 100, and all enjoyed every minute of the stay. The Bostonians not only exerted themselves individually to entertain the visitors, but even enlisted the weather man and had some especially good weather made to order. In the convention every feature of the interesting program which had been prepared by Secretary Randall and the other officers of the association, was carried out without a hitch or jarring note to mar the occasion.

### WEDNESDAY, FEBRUARY 4.

The first session was called to order by President George M. Fiske, of Boston, Mass., Wednesday,



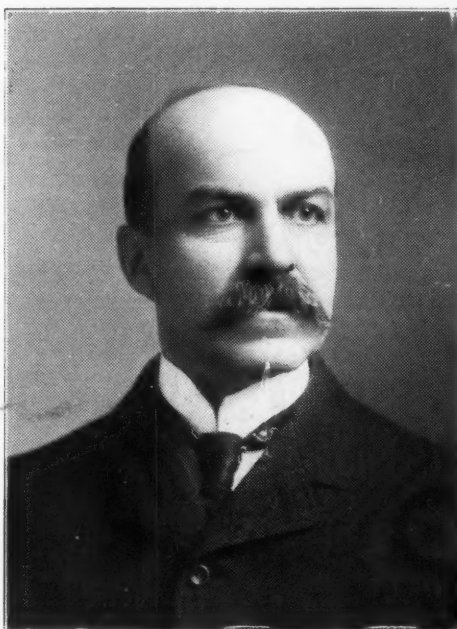
JOHN E. PARRY.

First Vice Pres. National Brick Manufacturers' Association.

day, February 4, at 2:30 p. m., and following the custom of the association, the meeting was opened by prayer, the convention being led in prayer by Rev. D. W. Waldron, for twenty-five years chaplain of the Massachusetts House of Representatives.

The President introduced Hon. W. M. Olin, Secretary of State, Boston, Mass., who made a short address of welcome on behalf of the Commonwealth of Massachusetts.

The Hon. J. C. Adams, of Indianapolis, ex-Speaker of the House of Representatives of In-



R. G. EISENHART.

President National Brick Manufacturers' Association.

diana, was called on by the president to make a response to the address of welcome, which he did in a very happy vein, putting everybody at ease by starting several hearty laughs. The secretary was then called on to announce the regular order of business. This was followed by the annual address by president Fiske, who reviewed at some length the brick-making industry of the year, and especially the work of the association and association members.

Following this address of the president, came the report of Treasurer Sibley, who was not able to be present, his report being read by Secretary Randall, then accepted and placed on file.

Next came the election and installation of officers, the election being peculiarly unanimous in that there was no opposition to any nomination made, and resulting as follows: R. G. Eisenhart, Horseheads, N. Y., president; John Parry, Boston, Mass., first vice president; W. S. Purington, Galesburg, Ill., second vice president; George H. Shellenberger, St. Paul, Minn., third vice president; Theo. A. Randall, Indianapolis, Ind., secretary; John W. Sibley, Chattanooga, Tenn., treasurer.

The new president, R. G. Eisenhart, Horseheads, N. Y., made a short address to the meeting on being introduced, as did vice presidents, Parry, Purington and Shellenberger, after which Retiring President Fiske resigned the gavel in favor of President-elect Eisenhart.

Then Secretary Randall was brought to the front and made to say his little say, and he was loudly cheered, because he has been a great worker for the association since its inception.

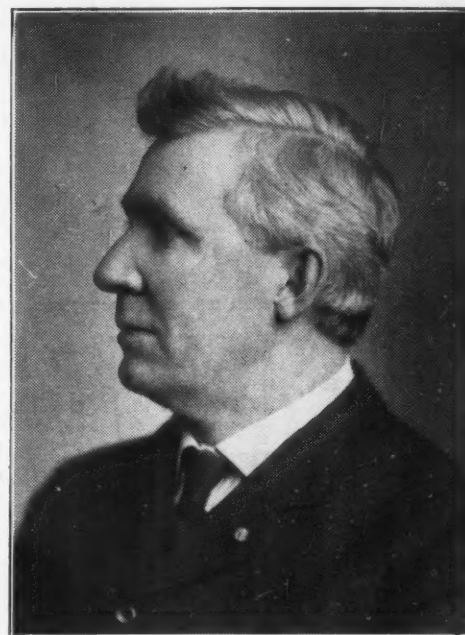
Before proceeding with the regular order of business, Vice President Parry informed the meeting that the Boston Committee had gotten up a little program for entertaining the visitors, including a banquet, a trip over the town and a special trip for the ladies, theater party, etc.

The first formal paper of the session was then read, which was on "Our Industry—the Past," by William Morrell, of Gardner, Me. Mr. Morrell was unable to be present, and his paper was read by B. J. Dunn, of Bangor.

This was followed by a paper by Mr. Jefferson Middleton, of Washington, D. C., on "Our Industry—the Present," in which Mr. Middleton outlined at some length the present condition of the brick-making industry and paved the way for the next paper, which was "Our Industry—its Future," by W. D. Richardson, Cleveland, Ohio. This series of three papers was the feature of the afternoon session, and they were listened to with much interest by those in attendance, and were followed by some general discussions on the subjects brought up, after which the convention adjourned until 10 o'clock Thursday morning.

### THURSDAY MORNING, FEBRUARY 5.

The first thing on the regular program when the meeting was called to order Thursday morning,



G. H. SHELLENBERGER.

Third Vice Pres. National Brick Manufacturers' Association.

ing was a paper by F. E. Frey, Cleveland, Ohio, on "Progress in Brick-making." Mr. Frey was not able to be present and the paper was read by Secretary Randall. The introductory part of the

[Continued on Page 23.]

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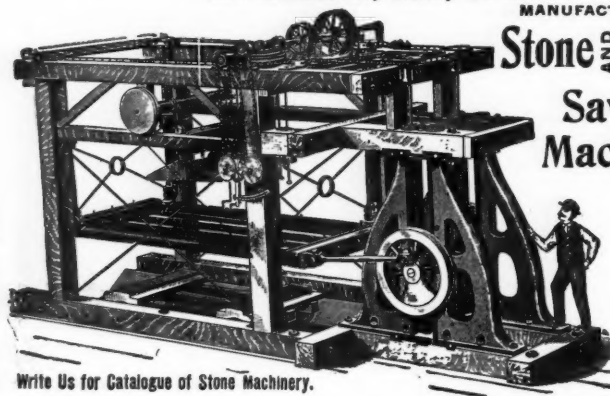
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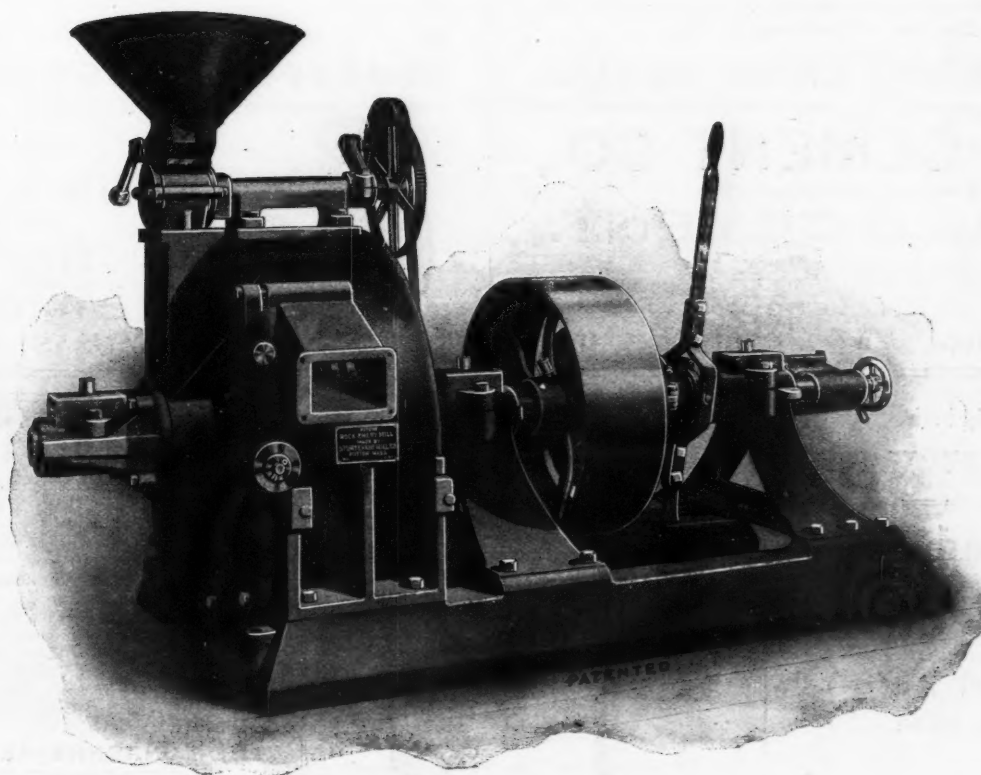
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LOUISVILLE, KY., MARCH, 1903.

## OUR SLATE.

### WORK TOGETHER.

*The Association Spirit is  
abroad in the land—are you in  
the procession of up-to-daters?*

As this copy of ROCK PRODUCTS goes to press we are moving into new and larger quarters, just half a block away from our old stand, and are now located at Main and Bullitt streets, where we occupy the whole main floor. We will tell you more about this move next month, and in the meantime we would be pleased to have all correspondence directed to this changed address.

Do you belong to the association?

JUST keep one eye on the developments in native asphalt this year, and see the industry grow.

THE sandy spots are places of interest since there has been so much stir over the sand-brick problem.

THE quarrymen are now watching the weather, and figuratively rolling up their sleeves for a busy season.

THE clay workers are great people for associations, and therein furnish a good example for producers in stone.

THE only thing in sight tending to restrict the use of rock products is the higher price incident to increased cost of production.

FROM the way things are opening up it looks like we may expect considerable marble news to come out of the West Coast territory this year.

THE supply of slate may catch up with the demand before the summer is over, but at present the demand is leading the supply by several lengths.

STRIKES and dissensions are coming early this year, but we are pleased to note the majority of them are being satisfactorily adjusted, and that promptly.

THE Maine granite men seem to be getting a good share of contracts early this year, and the outlook up there is for a very active season in the quarries.

FROM the estimates coming in from cement men, it looks like the production of Portland cement in 1902 was nearer sixteen million than fourteen million barrels.

FROM what our friends up at Saginaw say about the price of salt up there, it does not look as if a man could much more than earn his salt in the salt business.

DON'T forget that the best cornerstone for fair prices is reciprocity—an understanding with your competitor so that the buyer can not play one of you against the other to beat down prices.

IN connection with the meeting of the brickmakers at Boston the past month we are under many obligations to Secretary Randall, Editor of the *Clay Worker*, of Indianapolis, Ind., for courtesies extended.

THE raw material for cement is the first essential, but it is not by any means the only thing to be considered in undertaking to make cement—it takes lots of money to build a good cement plant, too.

THE stone workers, both at the sheds and in the quarries, are asking for more pay this season, so the man who is loaded up with cheap contracts for stone is likely to find his profits melt away in wages.

IF a barrel of salt weighing 280 pounds is worth 43 cents at Saginaw, and the barrel costs 25 cents, what is the use of boring a new salt well?—And, that is the price one of our friends writes us it is selling for.

WITH the number of new industries coming into the brick field this year, there does not seem room for another shortage of brick, and we hope the thing won't be so overdone that there will be a shortage of profits in the business.

THEY may not use a great deal of stone in the World's Fair Building operations in St. Louis, but a St. Louis paper estimates that there will be not far from \$2,000,000.00 worth of stuff used, and as this is largely gypsum, it will make a pretty lively demand in at least one branch of the rock product industry.

THE stone workers of to-day have their eyes open, and keep their wits at work, as evidenced by the interest stirred up in the question of turning a long stone column which has been mentioned incidentally in these pages. Last month came the information that a company was being formed down East to put a special machine on the market for this work, and now comes a stone worker stating that he has an idea in connection with the lathes in use to-day which is worth something.

WE have stated heretofore that union labor is in need of wise counsel, lest in its strength it makes radically unfair demands. Business is at a high tension and some concessions will be made by employers to save trouble, even though they are unfair, but there is a limit to this, and again we want to remind union labor that wise and conservative counsel should prevail, for already there are murmurings against unfair demands, and some of these murmurings appear to be just. Right is might, and might is not right, even when in the hands of the laboring man.

THE monument people are taking quite a lively interest in ROCK PRODUCTS, as the great number of these people on our subscription list will attest. And, for this we are thankful, but we wish they would go a little further and take a more lively interest in the department set apart for their own branch of the trade. There are plenty of subjects to be discussed in connection with the monument business, and there is information for all to be gained from such discussions. Let us hear from some of you monument men this coming month on whatever subjects are uppermost in your minds.

IT quite frequently takes a good promoter to start a needed industry, and there are good industrial stocks offered for sale right along, but the trouble in this kind of business is that all promoters are not out to promote an industry, because a need for it exists, and all stock that is offered on the market is not good. We have no complaint to make against the good, honest efforts in this line of work, but there are indications in the air of rock product industries being promoted now and then for the sole purpose of lining the pockets of the promoters, and the trade would be better off if this class of promoters would keep out.

ONE of our exchanges points out an instance in which a concern manufacturing large quantities of building material refuse to make any effort to get a large contract that was to be let, claiming that they had ceased spending their time going after large contracts, and were bending their efforts to get the smaller ones where competition was less. There is something in this stand, too, when you come to consider it from all points, and there is not much question but what a multitude of small orders at fair prices is better than one large order at uncomfortably close prices. This stand also augurs well for better prices on large contracts, for when a large consumer finds this over anxiety to sell to him gone, his opportunities for beating down prices will be reduced, and by and by, even the large contracts will be let at good prices.

## From Our Own Correspondents.

### BARRE.

BARRE, VT., February 24.—As the spring time draws near, it brings with it assurances of another very busy year in the granite business. The quarry owners and manufacturers have a large amount of orders on hand. Seldom, if ever, has there been so much large and expensive work in the market at one time as there is at present, and the manufacturers should take advantage of the times when they are good and lay up some assets for the reaction that is almost sure to come some time in the future.

This can only be accomplished by perfect organization, and a recognition of the fact that our neighbors' interests are our interests, and if by any joint action we can make our neighbor more prosperous we will most assuredly help ourselves as well as him. Probably nowhere in the whole country are the working men better organized than they around Barre. And, the effect of this has been very noticeable during the last three months. Increased demands for pay and reduction of hours have been made by almost every class of workmen in the city. A settlement has been effected with the granite cutters on a three dollar a day minimum for an average workman, with an eight hour day, and a half day holiday on Saturdays, during the months of June, July, August and September. This settlement is for a term of five years and should insure practical peace between all interested for that time. A settlement has not been effected up to this date with the tool sharpeners, but there is little doubt that some agreement will be reached, during this week. The committees who have been trying to effect an agreement with the polishers union, and the bumpers and derrickmen's union, have not been able to present a report to the manufacturers as yet, as there is some minor matters still in dispute, but enough is known to make it a certainty that by the time this is before the readers a settlement will be effected with them.

One of the most important transfers of quarry property in this vicinity that has occurred for a number of years took place last week. The property includes all the quarries and land on what is known as Cobble Hill, and which, until the transfer, belonged to P. O. Wheaton and Jerry Hutchinson. There is about 140 acres of quarry land covered in this deal, and as it has passed into the hands of a firm composed of five of Barre's best citizens, great developments are looked for. The new firm consists of John E. and Donald Smith, the sole owners of the quarries and manufacturing plant of the well known firm of E. L. Smith & Co.; John Low, the president of the Granite Savings Bank and Trust Co., and who is well known as one of the strongest financial and best business men in the city. The other two members of the firm are Ex-Mayor N. D. Phelps and H. A. Phelps, who conduct a large and prosperous hardware business. With their experience, business enterprise and extensive capital, it is a safe prediction to make, that the quarry which originally brought Barre granite into the market, will develop into the largest quarry in the State. The stone has the peculiarity of being the whitest granite put on the market, and is particularly adapted for vaults, building work, large spires, bases, roof stones, underpinning, curbing and paving. As a rock-faced granite there is nothing to equal it, as it can always be split with a fine even surface, and when used for fine monumental or building work, the hammered surfaces show up almost as white as marble. The State house at Montpelier was erected with stone from this quarry some 50 years ago, and to-day the building, owing to its bright and clean appearance, is the admiration of all who see it. Some of the largest monuments in the country have been produced from these quarries, including the Trombley monument, erected in Woodlawn, N. Y.; the Battle of Shiloh monument, erected at Shiloh, Tenn., and the famous Lovejoy monument, erected at Alton, Ill. The granite lies in

sheets, and there is no limit to the size of stone that can be quarried. Barre is to be congratulated in the fact that this property has passed into hands that will spare no expense or effort in its development, and add to the largely increasing trade in this busy granite center.

One of the most important inventions in relation to the granite business has just been perfected by James Pirrie, of Montpelier, Vt., and a patent is now pending on it. Just as soon as he is protected on this point, it will be placed on the market. Owing to the hard nature of granite, and the large amount of tools required to cut it, the sharpening of those tools have always been a large item of expense in the production of finished granite. The work has always been done by hand, and one sharpener has been required for every thirteen men employed cutting. Mr. Pirrie has been experimenting for the past twenty-five years on a machine that would take the place of the present expensive method. Although success failed to attend his efforts for years, and the inability to secure the needed means to follow his failures and make a success out of them, were enough to discourage any one, yet with that sturdy perseverance so often met with in inventors, his efforts have at last been crowned with success. Mr. Pirrie's machine will do the work of six men, is easy of operation, and hand. Quite a number of the manufacturers here sent down a large amount of tools to be sharpened by the machine, and the men who used them declared that they were the best cutting tools they had ever used. The value of this invention will be incalculable to all stone men, because, although the idea was conceived for granite tools, it can be used on all kinds of stone tools of a similar nature.

Another granite quarry is being opened at Bethel, Vt., where they have found a stone particularly adapted for building purposes. The towns people are raising a fund to buy a large site for a manufacturing plant which they are going to give to a company that is to locate a large manufacturing plant there. The town is also going to exempt them from taxation for ten years. This company has secured the contract for the granite work on two private residences in New York amounting to \$250,000.00. This will give them a good start, and will prove to be the foundation of a prosperous business in Bethel. Vermont is most assuredly forging her way to the front as the banner State for producing granite, and with the energy with which the business is being pushed, and the unlimited supply spread all over the State, she will soon take her place amongst the industrial States of the Union.

A great deal of interest is being manifested in the proposal to build a new railroad between Barre and Rutland, Vt. The enormous traffic that originates at Barre has drawn the attention of some of the leading railroad men of the country to it, and in their desire to secure some of her steadily increasing traffic, they propose to build a through line between those two places. This will give Barre through connections on the Delaware and Hudson railroad, and will enable her to enter the Eastern markets more advantageously than at present. With the advent of good weather I expect to be able to report progress in this matter. Vermont is about as well supplied with variety of weather as she is with granite; we have had zero weather for a whole week, ranging from zero to forty below. This does not affect the granite business as much as it used to, as the modern plants that are now built, are all equipped with steam or hot air heat, so that the men work about as comfortably when it is forty below zero as they do when it is one hundred in the shade in summer.

The Quarry Owners' Association held its annual meeting in February and elected the following officers: President, James Boutwell, Montpelier; vice president, Donald Smith, of Barre; secretary, Wm. Barclay, Jr.; treasurer, John E. Smith, of Barre. This association is in a very flourishing condition, and has done a great deal toward unifying the quarry owners' interests and bring them in harmony with each other. This association should be a beacon light to the granite manufacturers. What they have accomplished, can easily be done by the manufacturers if they go at it with the same spirit. The price on all grades of stock has been raised five cents per foot during the last month. This has been made necessary by the increased cost of materials and the adoption of the eight hour day on the quarries.

One of the most pleasing functions in our city last month was the annual social and dance of the employees of the firm of Barclay Bros. The good feeling which exists between this firm and their employees has been manifest during the past seven

years, when they make it a point to meet together once a year in a social way; there were almost three hundred employees and guests present and a most enjoyable evening was spent by all. Mr. Barclay, Sr., presided at the gathering and gave an interesting sketch of the progress of the firm in the last sixteen years. From a small beginning it has grown to be one of the largest firms in the monumental business in the country.

### QUINCY.

QUINCY, MASS., February 23.—The weather during February has been anything but conducive to the speedy quarrying and completion of work in the staple industry of this city. The month opened fair as to the elements; there was a dearth of snow, and with the arrival of long days, an early spring was promised. Work on the season's orders was progressing rapidly. While the only hindrance to quarrying was an occasional heavy rain. It seemed as though the rigors of winter had lapsed into weather which betokened spring, and manufacturer and quarry-owner were alike happy.

Their joy was shortlived, however, for February 17 an old-fashioned blizzard held sway, and tons of snow well nigh filled the quarry holes. The storm was followed by piercing cold and the weather embargo was on for the best part of a week. This stopped all work and the conservative say that trade received a two-weeks' set back. At this writing, milder weather prevails and work is being resumed.

The labor war as regards the cutters and blacksmith, has been happily averted, so there will be no suspension of work March 1. Already, the Board of Arbitration is attempting to solve the problems under discussion and a report is expected not later than February 25. Both sides must abide by the finding of the board and March 1 will find business uninterrupted.

The manufacturers have another difficulty on hand, however, which must be disposed of before April 1. This time the engineers, some 85 in number, have affiliated themselves with the International Union of Steam Engineers and have forwarded to the Manufacturers' Association for its approval or disapproval, certain articles of agreement.

The Manufacturers' Association has appointed a committee to confer with a like committee from Local 79 of the Union, but no action has been taken in the matter yet.

Walter R. Fegan has purchased and remodeled the old W. C. Townsend plant in South Quincy, where he will conduct a wholesale and retail manufacturing business.

Word was received here the first of the month of John Lawry's death, which occurred January 26, at his home in Cornwall, England, where he had gone in hopes of regaining his lost health. The deceased had been identified with the trade here for a score of years, and his loss will be keenly felt by the manufacturers of Quincy, who admired him for his sterling business qualities.

The manufacturing plant of Thomas McDonnell, on Hancock street, which since that gentleman's death has been run under the supervision of his sons, has gone out of business. The buildings and appliances used have been sold and are being moved to South Quincy.

Mr. Fred Barnicoat reports an excellent business at his modernly equipped plant in South Quincy. Work in the statuary department has progressed to such a degree that Mr. Barnicoat has found it necessary to increase his force of cutters.

Mr. James N. White, a well known granite manufacturer, died at his home in West Quincy January 9. He was born in Fredericton, N. B., sixty years ago, and was one of the pioneers in the monumental business, and began such work under the firm name of James N. White & Son in 1872. Mr. White was also a charter member of the Quincy Manufacturers' Association and a member of the Royal Arcanum. The business will be carried on by sons of the deceased.

Charles A. Swingle, for years connected with his brother, of the firm of Swingle & Falconer, and John E. Ford, a well known draughtsman, are to engage in the wholesale monumental business here.

Following is a partial list of dealers to visit the trade during the month passed: G. B. Eckardt, Toledo, Ohio; W. F. Cook, Springfield, Mass.; Mr. Adler, of New York City; C. Hall, of Leland Hall & Co., of New York City; L. L. Manning, Plain-



field, N. J.; T. A. Bassett, of Thomas Phillips & Son, New Haven, Conn.; O'Rourke Bros., Salem, Mass.; D. O'Connor, Fitchburg, Mass., and Mr. Rendle, Auburn, Me.

Returns from the railroad shipping terminals for January, show that the total amount of granite shipped during the month to be 7,768,813 pounds. Same was distributed as follows: West Quincy, 3,624,250 pounds; Quincy Adams, 2,241,783 pounds; via Quarry Railroad, 1,897,780 pounds.

### SYRACUSE.

SYRACUSE, N. Y., February 23.—Articles of incorporation were filed during the past week of the Hudson Portland Cement Co., of which Lyman C. Smith, of Syracuse, is at the head. The concern is capitalized at \$6,000,000.00. Mr. Smith is a capitalist of unlimited means and was interested in the project by Frank Wade, a young attorney and former Yale football player. Wade made a trip to Hudson, N. Y., on business and was there informed that there were valuable deposits of marl and shale, which would make the best kind of Portland cement, at a place about two miles from Hudson. After further investigation he hustled around and secured options upon over 1,000,000 acres for a little over \$1,000.00 and returned to Syracuse. He approached Lyman C. Smith, the typewriter magnate, and the latter sent an expert to examine the property. The latter reported that it was all that Wade claimed and more, so Mr. Smith became interested and a company was formed. The new concern will build an immense plant near Hudson. The supply of rock is unlimited and the output of the cement plant will be 2,000 barrels a day. It is planned to erect two plants of like capacity on the grounds. The mills will be built on the bank of the Hudson river and a steam railroad will be built to the beds to haul the raw material. Ocean-going vessels drawing twenty feet of water can land at the company's docks and load for any part of the world. The New York Central, the Boston and Albany railroads run by the property. The officers of the company have not been chosen but it is said that Lyman C. Smith will be the president.

The Onondaga Litholite Co. has elected these officers: President, Charles A. Lockard; vice president, Edward A. Kingsbury; treasurer, J. Orville Nye; inspectors of election, E. M. Brown and Dr. E. S. Snow; directors, M. Crouse Klock, Charles A. Lockard, James M. Hudson, E. A. Kingsbury and J. O. Nye; secretary, M. Crouse Klock. The company has several large contracts for sidewalks and building and will spend \$10,000.00 in new machinery. Twenty-five men will be employed.

At the annual meeting of the Asphaltina Co., of Syracuse, the following officers were elected: President, W. J. Gillette; vice president, W. C. Brayton; secretary and treasurer, G. B. Dickison; directors, W. J. Gillette, W. C. Brayton, H. J. Stevens, E. F. Allen and G. B. Dickison. Mr. Dickison was appointed general manager.

A peculiar development of the recent typhoid fever scare at Ithaca is the heavy demand for stone jugs and bottles in which to keep the spring waters that are being used. Either spring or boiled water may be kept in these jugs free from germs. The Syracuse Stoneware Co. has been unable to supply the demand for five gallon jugs, most used by the dealers.

The New York Brick and Paving Co. has elected these officers: President, John L. King; vice president, W. B. Cogswell; secretary, E. N. Klock; treasurer and general manager, J. N. Breed; trustees, A. A. Howlett, J. L. King, Thomas W. Merriam, E. N. Klock, J. L. Breed, W. B. Cogswell and T. J. Leach. The company has been running its plant all winter and will probably not have to shut down. Their clay is hauled by canal from the Three Rivers, and enough is drawn in the summer to last through until navigation opens in the spring. The company makes paving brick and has large contracts in Syracuse, New Haven, Conn., Springfield, Mass., and other Eastern cities.

The Syracuse Mantel and Tile Co. reports a good business. They are now working upon the addition to St. Mary's church and private residence.

The Bank of Wayne interests are preparing to operate the pottery at Lyons, N. Y., this spring.

C. & L. Merrick have completed their big contracts at Watertown and Oswego and are preparing to start their brick plant in the Spring. They have considerable brick on hand, but think they will dispose of them all by the time they begin the manufacture again. George W. Pack & Son have but little stock on hand.

William D. Dunning, president of the Alexander Iron Works, will attend the annual convention of the National Association of Manufacturers of the United States to be held April 14 to 16, at New Orleans. Mr. Dunning was actively connected with the association in its early years. A large attendance is expected at the meeting.

### CHICAGO.

CHICAGO, ILL., February 25.—The employers of Chicago have granted an increase of wages to the 4,000 members of the bricklayers and stone-masons union that will amount to nearly half a million dollars in the course of a year. The bricklayers have been getting \$4.40 for a day of eight hours, and asked for \$4.80. Some have already been getting this amount, because of the scarcity of help. From now on, it becomes an accepted scale, to run for three years. In addition to this increase in wages, the men are allowed a half holiday on Saturdays for at least six months in the year. With these troubles settled, the prospects for active building operations this season are very bright in this city, and every one interested is feeling relieved, for the possibility of strikes has been removed for at least three years, including sympathetic strikes and all.

The Illinois Brick Co. earned 1.24 per cent. on its common stock during the past year. This is a large concern, is backed up by men of large means, and has prospered from the start.

The pupils of the Dore school in this city, who are apprentices of the bricklayers and stone setting trades, are being educated at the expense of their employers, the building contractors, have become so deeply interested and absorbed in their studies that they have had their school day extended from five to six hours. There are 123 of them and they seem to think that one of the best "get-rich-quick" schemes of the day is to blossom out as full-fledged bricklayers and stone masons at the earliest possible moment.

The Allis-Chalmers Co., the well known builders of rock crushing and other stone machinery, as well as cement machinery, etc., of this city, will May 1 remove their general offices from the present location in the Home Insurance Building, to the New York Life Building, corner of La Salle and Monroe streets, Chicago. This move is only another indication of the progressive spirit which prevails in the management of this strong industrial. The Allis-Chalmers Co. has for the past years been expending enormous sums of money in betterments at their various works in Milwaukee, Chicago and Scranton, so as to give their customers the best possible service in point of economy and quick deliveries. The new offices of the Allis-Chalmers Co. will provide ample space for the various sales departments and general business offices which will be indicative of the best possible service to their trade. To give a fair idea of the scope of business enjoyed by the Allis-Chalmers Co., will mention that during the past two months, orders for either engines, mining machinery, rock crushing machinery, sawmill machinery, or flour mill machinery, were booked from every State in the Union, besides the following foreign countries: England, South Africa, Mexico, Canada, Chili, Central America, Brazil, West Australia, Turkey, Finland, Yukon Territory, Belgium, British Columbia, Bolivia, Hawaiian Islands, Peru, Alaska, China and the Philippine Islands.

The talked of appropriation of \$20,000,000.00 by Congress for highway construction is a subject of special interest to stone men just now. The good roads convention met in this city February 20 and was well attended, delegates being present from thirty States. Colonel Pope, of Boston, was chairman. One of the speakers, John Brisben Walker, said there were approximately 10,000,000 wagons in use in the United States, and he concluded that \$900,000,000.00 is lost annually to the people of the United States because they are too ignorant, or too careless to solve the good roads problem. In course of the meeting it was declared that the improvement of roads is the greatest industrial problem in the country.

One thing is certain, when the people become thoroughly aroused to the importance of good roads, there will be a stone crusher in nearly every locality where suitable rock is to be found.

Lime is quiet, as is usually the case at this season of the year. An early spring is predicted, and a revival of business in all lines of the stone and lime industries is confidently expected.

## Letters From the Trade

### Paper Mills Liberal Users of Limestone.

Charles Williams & Co., Bigelow, N. Y.—Replying to our inquiry of recent date, will say that we manufacture lime for the Northern New York market which we ship mostly in bulk. We also furnish lime rock for pulp and paper mill. We supply about five mills and they took 250 cars last season, running 20 to 40 tons to the thousand.

### Will Build a Modern Gypsum Plant.

The Winters Gypsum Co., Sandusky, Ohio.—This company has its shaft nearly completed and we find the gypsum is much better than we first thought it would be. As soon as our railroad is completed we will be ready to ship the raw material. We will build a plant not to exceed in cost \$100,000.00. All the machinery and the mines will be equipped by electric power.

### Portland Cement Outlook Very Bright.

The Newaygo Portland Cement Co., Newaygo, Mich.—We have our new mill completed and have eleven kilns going, giving us a capacity of 1,200 to 1,500 barrels a day. Coal continues scarce and some of the Michigan mills have been closed down temporarily because of their inability to get coal. Trade promises to open up with a rush in March and the mills are not anxious to sell ahead at today's prices. It looks to us like there will be a shortage of cement in 1903.

### Going to Quit the Stone Business.

D. P. Oram, Dayton, Ohio.—I have been in the rock trade in a small way for twenty years, and have both hard and soft limestone on my farm, although I never manufactured lime. It has been burned in this vicinity for more than fifty years. At the present time the fuel question is what troubles the lime business. Wood is hard to get and timber is getting very thin. Replying to your inquiry as to how you may class me, will say, in the quits, for I am located too far from the market and have too much dirt to move to compete with the trade of to-day. Also the fad now is cement walks and curbing, and the most of my trade has been curbing and coping. I am very glad to get your paper and like to read it very much.

### An Up-to-Date Missouri Stone Concern.

Myers Stone Co., Joplin, Mo.—We have a fine quarry, with new equipment, and think we have the best stone in this district. We have two large twentieth-century gangs running, made by the Lincoln Iron Works at Rutland, Vt., and our mill building is large enough for four gangs. We have a Wardwell channeller, made by the Steam Stone Cutter Co., Rutland, Vt. We have our own electric dynamo to light up our mill and quarry, running the mill 24 hours a day. We have just about finished the stone used in the new Carnegie building, which is the finest building in these parts, and are sold ahead on other orders.

### Pushers in Western Marble.

The Sky Blue Marble and Onyx Co., Riverside, Cal.—We have just completed setting up a large derrick of twenty tons capacity with which we will start to get out dimension marble. The lime trade is excellent with us and our lime is giving the best satisfaction. In fact, we can not make it fast enough for our trade, and we will start another lime kiln in a few days.

### Will Enter the Brick Business.

I. W. Phillips & Co., Tampa, Fla.—Having sold our grocery and feed business to J. K. Parrish, the undersigned will engage exclusively in the building and crate material line. Will also engage in the manufacture of Georgia and Florida brick and act as distributing agents for the Kinder Lou Mills and the Southern Fruit and Vegetable Co.'s fruit and vegetable crates.



### A New Idea on Stone Turning.

David Y. Beals, Warton, Ontario, Canada.—I notice in reading your paper an article about how to turn a long stone column without breaking it in the lathe. Now, I have an idea how to overcome that trouble with the Lane lathe at a trifling expense and I have consulted with several lathe men about it, and they say it is a grand idea. I am not going to give this idea away for nothing, but if some enterprising stone man wants to write me concerning it, I will make known to him conditions and terms.

### We Apologize.

Mt. Airy Marble Works (W. D. Haynes & Co.), Mt. Airy, N. C.—In your February number of ROCK PRODUCTS you have a notice on page 15, in regard to our business, in which you are in error. We are not running any quarries. We are dealers in marble and granite monuments and tombstones. Messrs. Thos. Woodroffe & Sons operate The Mt. Airy Granite Quarries.

### A Prime Factor in Ochre.

The American Ochre Co., Cartersville, Ga.—Our product is of clay nature, and in process of manufacture it is first washed and then dried by air and sun, after which it is pulverized, barreled and shipped. Our plant is well equipped with a full line of machinery.

### A Health Growth.

Maguire & O'Heron, East Milton, Mass.—Our shipments for the past year exceeded 1901 by 25 per cent. There are no new quarries here and nothing special to note in the way of news.

### A New Quarry.

Laurie Stone Co., Sturgeon Bay, Wis.—There has been an increase with us in the building stone trade of one-third over last year. The firm of Greaf & Neber have started a stone quarry near us.

### A Nice Trade in Limestone Products.

El Paso Ice and Refrigerator Co., El Paso, Tex.—The stone industry in this part of the State has not yet been developed at any considerable extent. We have very high grades of limestone in Mount Franklin which overshadows our city. A little over fifteen years ago I located a quarry just four miles northwest of the city for the purpose of supplying the El Paso Smelting Works with fluxing rock. My shipments now approximate 4,000 tons a month. I also operate a very fine lime kiln, having a capacity of 225 bushels a day. Recently I installed a No. 6 D. Gates crusher, with a capacity of 600 tons a day. This now enables me to supply El Paso with crushed rock for concrete work, streets, etc. I am also beginning to supply the railroads with material for ballast, bridge piers, etc.

### A Nice Increase.

B. N. Arquitt & Sons, Farley, Iowa.—We got out about 200 cars more of stone the past year than the year before. In the way of equipments for the coming season we are putting in a new steam drill and also an electric battery to use for blasting.

### Built a Lime Kiln.

A. S. Curtis, Putnamville, Ind.—I have done nothing in the stone business the last year except building a patent lime kiln with a capacity of 600 bushels a day, but it is not completed yet. This kiln is the property of A. B. Keepert, of Indianapolis, Ind.

### Make a Specialty of Range Stone.

James A. Kantz & Co., Easton, Ohio.—The output of our quarry the past year was about one-fourth more than in 1901. Our special line is range stone, and in the way of additional equipment, we have put in steam drill and hoist.

### Rush of Settlers Making Busy Times in West Canada.

John J. Smith, Yorkton, N. W. T., Canada (Dealer in real estate, building material, etc.)—Owing to the rush of settlers in the Canadian West we are far behind with our orders and can not accept any more orders for this season's output. I read your paper with pleasure, because I find it an educator in many respects.

## For the Retailer.

### The Interstate Builders' Supply Association.

Meets Semi-Annually.

JOHN A. KLING, Cleveland.....President.  
C. E. McCAMMON, Cincinnati, Ohio.....Vice President.  
GORDON WILLIS, St. Louis, Mo.....Vice President.  
J. N. THAYER, Erie, Pennsylvania.....Treasurer.  
RICHARD KIND, Toledo, Ohio.....Secretary.

Official Organ, ROCK PRODUCTS.

### ASSOCIATION WORK.

#### Report of Secretary Richard Kind at the Meeting of the Interstate Builders' Supply Association, January 20-22.

At the last meeting of this body I was instructed to correspond with manufacturers in reference to their attitude towards this Association, etc. Along such lines, I opened correspondence with eighty-six manufacturers of building material, informing them of the resolutions passed and requesting their opinion.

The replies varied very much. The majority, however, agreed with our ideas and contained promises that the rights of the dealer would be protected. Having notified the membership by a circular some time ago, containing an outlining of such replies, you are acquainted with this subject.

It may be of interest to the gentlemen who attend an annual meeting of our association, for the first time, to know how, why and when it was organized.

During 1899, certain manufacturers, principally in the State of Ohio, developed peculiar ideas, and it was rumored that the dealers would have to take the shorter end of the bargain. To prevent this, a number of building material dealers met at Cleveland November 3, 1899.

Our second meeting was held November 17 and 18, of the same year, and having learned in the meantime of the strength of co-operation, we proposed that a permanent organization be formed, and it was so adopted.

The child was virtually born then and there; the christening took place two weeks later in the presence of its god-fathers. The child soon began to walk, and having in the mean time grown a few teeth, the boy commenced to show them quickly thereafter.

You can easily imagine that we had our troubles during the following years. We need not be ashamed, however, to point back to this time, because the results obtained by the association and notwithstanding the fact that it was in its infancy, were appreciated by its members.

Certain manufacturers attempted to ridicule our association, and would tell other dealers that it would never amount to anything.

This has been repudiated, and I notice that the same people are now with us, express friendly feelings towards us, and recognize the association as an institution which has come to stay.

In the meantime, our membership increased, firms of Cincinnati, Youngstown, Columbus, Dayton, Akron, Ohio; Grand Rapids, Mich., and Meadville, Pa., were admitted during the early part of 1900. During 1901 firms were admitted from Port Huron, Bay City, Jackson, Mich.; Marion, Ft. Wayne, Indianapolis, Ind.

The last annual meeting was held at Toledo, Ohio, a year ago, and it was at this meeting that the manufacturers for the first time in the history of this association, were our invited guests. The result was so gratifying that your executive committee resolved to extend invitations to manufacturers for this meeting on a larger scale.

I have the assurance of about fifty manufacturers, that they will be with us, and from the joint meeting I expect much good. A frank discussion should be had at that conference.

Immediately after adjournment of last year's annual meeting, I made up my mind to canvass the following States for new members:

New York, Pennsylvania, Ohio, Michigan, Indiana, Illinois, Iowa, Wisconsin, Minnesota, Missouri and Nebraska, and accordingly opened correspondence with about 220 building material dealers. The result, I think, was a most gratifying one, and it is our pleasure therefore to welcome to-day many representatives of firms from above named States admitted during 1902.

While carrying on this correspondence, I was advised by a firm of Omaha, Neb., that the dealers of that State are organized into a State organization. I did not consider it then the proper time to seek an affiliation with that body of men, but I respectfully recommend that this matter be again taken up at a future time.

As far as the Eastern States are concerned, your executive committee has already taken some action in reference to this matter.

An active canvass for new members should be continued and it looks to me, that a "committee on extension of membership" should be created, same to be composed of one member from each State represented in the association, and the secretary of the association to be a member of this committee *ex officio*.

At past meetings I made it a point to submit a detailed report of my transactions. I believe, however, that such a report to-day would take up too much of your time. The principal transactions had by your secretary during 1902 were reported to the executive committee and by its minutes you have become acquainted with them.

It becomes my painful duty to announce that we have lost a good member lately. On December 25, 1902, Messrs. Eichelberger & Sons, of Dayton, Ohio, advised us that Mr. C. A. Starr, of the same city, had died on December 24. I wired Messrs. Eichelberger & Sons to place a floral tribute on the coffin of Mr. Starr in the name of this association. Those who attended the last annual meeting at Toledo, will remember that Mr. Starr was not in the best of health, and I remember that Mr. Eichelberger, his competitor, supported him on their trip, and assisted him all around while at Toledo, thereby showing the true spirit of this association.

I respectfully ask that a special committee of three appointed to draft suitable resolutions on the death of our friend Starr, and that such resolutions be tendered to the family thereafter.

From time to time I addressed circular letters to our membership, pertaining to business in general. The last, mailed during the early part of December, 1902, contained the following questions:

First—What are your prospects for selling as much Portland cement during 1903 as during 1902?

Second. Do manufacturers, which you represent, give you any assurance of protection on price of Portland cement, and have your manufacturers filled their 1902 contracts?

Third. Have you any recommendations to make?

The majority of our members replied instantly; such replies were compiled and the membership notified.

I find that our members are almost unanimous that the manufacturers should sell to dealers only, or, as others express it, that the manufacturers should be induced to protect the dealer and jobber in preference to the contractor and consumer.

Another recommendation expresses the sentiment "that we assist the manufacturer in maintaining reasonable prices as this enables us to show a spirit of 'live and let live,' which should result in closer contact."

The establishment of a bureau of information is also advocated. To enumerate all ideas expressed, would lead too far. I have, however, prepared short extracts of all recommendations made, and submit them for your inspection.

Members should be prompt in replying to circular letters sent out for the purpose of obtaining certain information, so as to enable your secretary to communicate the results to the entire membership quick and without delay.

I also submit to your consideration a matter to which my attention was called some time ago. To facilitate matters I would recommend that a special committee be appointed to look into this matter and report before adjournment.

I firmly believe that this association will solve the problem and ultimately give a legitimate dealer the protection which he should have, and mak-



ing it almost impossible for a manufacturer to overlook him. The position taken by our association is logically correct and just. It simply requires co-operation among its members, mixed with a little unselfishness; some active work of all concerned, courage and manhood.

I am proud to be a member of this association and anything in my power will and shall be done, to further its interests. I have always considered it a pleasure to attend to the duties of secretary and am amply repaid by the results and encouraging letters received from our members at times. I have endeavored to do my duty cheerfully, conscientiously and without fear. My relation to our members was on the most friendly terms at all times, and it is therefore my pleasant duty to hereby express my thanks; not less for the many courtesies received during the year from my brother officers and the members in general.

This meeting should be productive of good results, and when we go home again, let it be in the determination to take up the work anew, and with renewed vigor, to increase the number of members, to do everything for the interest of the association, and to assist each other with true unselfishness.

### SOME GOOD ADVICE.

Address of President John A. Kling at the Meeting of the Interstate Builders' Supply Association, Indianapolis, January 20-21.

Standing on the threshold of a new year, and reviewing the one just closed, we find great encouragement for future work in the results accomplished. Not only has the membership of our association been increased fifty per cent., but our territory has been extended so that we have representatives in all the important cities from Niagara Falls, and Rochester, N. Y., on the East, to St. Louis on the Southwest, and Kansas City on the West.

While it is true that our review brings to light many things which, had our foresight been as good as our after-thought, could have been materially improved upon; we should, however, be thankful for the success attained and look forward to greater results during the coming year.

During the past year, your executive committee met five times, while special committees of the executive committee met eleven times. At each of these meetings, matters of importance to this association were discussed and such action taken as was deemed advisable. Among other things, a number of complaints made by members against manufacturers were adjusted to the entire satisfaction of those concerned, and one of the most important results accomplished, was the recognition of our association by many Western manufacturers, and I sincerely hope and believe that we will eventually have enough influence to secure recognition from all manufacturers of builders' supplies.

In order to accomplish this, the real object of our association must be carried out to a greater extent. While the association is, and has been a benefit to all its members as it has been conducted in the past, its real object and purpose, that of protecting the dealers' territory from encroachment by the manufacturers, must be pushed to the front at all times.

This can only be brought about by the members of our association acting in unison through the secretary, placing before him such information as to treatment received, conditions imposed, territory allotted, etc., as in their opinion would be detrimental to the best interests of any or all our members.

Greater friendship and a closer relationship must be had. We must feel that the interests of the association are ours, and not be passive members who find it very agreeable to sit by and enjoy all the benefits which are derived as the result of labors of others, but we must all put our shoulders to the work and assist in making the association a complete success. Many heads working with one point in view can accomplish more than a few.

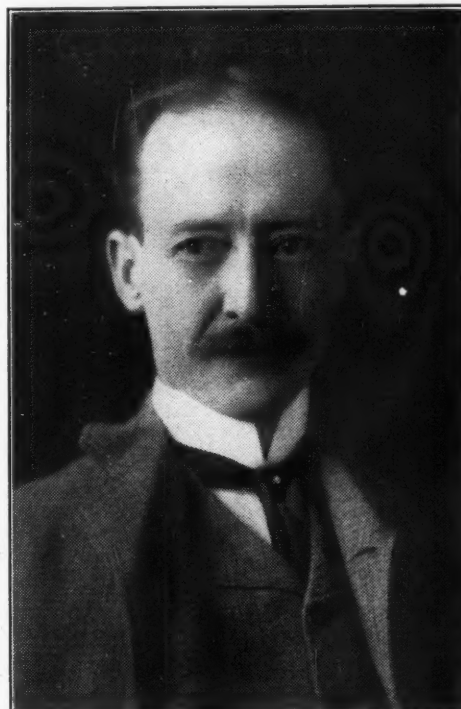
I would recommend that the members of this association assist the manufacturers in obtaining the best prices possible for their materials, believing that by working with the manufacturer, the relationship between dealer and manufacturer will become more pleasant, and in time result in a mutual feeling of dependency of the manufacturer upon the dealer as well as dealer upon manufacturer.

It is my opinion that a matter of interest to all our members which should be discussed at some convenient time during this session, is the bankruptcy law in its present form and application. Having served the purpose for which it was created, I am heartily in favor of its repeal and revision.

Demurrage or car service is another important matter which our association should give serious consideration. While the railroad companies are continually increasing the capacity of cars, the time allotted us for unloading remains the same as when forty thousand pounds was a maximum car. On all material, except bulk lime, a sliding scale should be made effective upon a basis of forty thousand pounds for each twenty-four hours and proportionately longer on cars of greater capacity. On bulk lime, I contend that we should have at least as long a period as is given coal dealers on coal.

As an association, we can secure recognition from the railroad companies on this point, whereas if we were to take up the matter as individuals, our claim would be disregarded. I therefore recommend to you that at a certain time during this meeting, this matter be taken up, and such action taken as would be expedient.

In conclusion, I wish to thank the executive committee for their able assistance during the past year, and you, gentlemen, for your kind attention.



GORDON WILLIS, ST. LOUIS, MO.  
Vice President Interstate Builders' Supply Association.

The Batavia Supply Co., Batavia, Ill., will erect a \$20,000.00 stone crushing plant.

The Butler Builders' Supply Co. has been incorporated at Butler, Pa., with a capital stock of \$100,000.00.

B. Frank Brubaker, Freeport, Ill., has secured a contract to furnish 500 barrels of cement to be used by the water company at that place.

Parr & Co., of Galveston, Tex., have received a contract to furnish 27,000 barrels of cement for Government use in concrete work at that place.

John P. Kane & Co., 287 Fourth avenue, New York City, have been awarded a contract to furnish the dock department of that city with 10,000 barrels of cement.

E. W. Branaugh, Carthage, N. Y., has purchased the coal and ice business of M. W. Maxwell, and will, in addition to this business, carry a stock of building material, such as lime, brick, etc.

The National Building Supply Co., Baltimore, Md., has purchased the interest of the National Mantel and Tile Co., of that place. The National Building Supply Co. is an old institution, having been formed in 1851. Mr. J. A. Marion, the general manager of the National Mantel and Tile Co., will continue in charge of the works, and the operations will be considerably enlarged.

# Lime.

## The National Lime Manufacturers' Association.

Meets Semi-Annually.

A. NEWTON, Chicago, Ill.,..... President.  
PETER MARTIN, Huntington, Ind.,..... First Vice President.  
W. B. HILL, Kansas City, Mo.,..... Second Vice President.  
CHAS. WARNER, Wilmington, Del.,..... Third Vice President.  
C. W. S. COBB, St. Louis, Mo.,..... Treasurer.  
E. H. DEFEBAUGH, Louisville, Ky.,..... Secretary.

Official Organ, ROCK PRODUCTS.

### Some Interesting Experiments with Hydrated Lime and Portland Cement.

The Charles Warner Co., Wilmington, Del., has been conducting a series of interesting tests along the lines of mixing hydrated lime with Portland cement. As a result of these experiments they have favored us with the following article on the subject, and advise us that they think the use of hydrated lime will open up an extensive field for lime manufacturers in the near future, if the matter of its manufacture and use is intelligently handled:

"The recent introduction of hydrated lime made by improved and economical processes has opened up possibilities in several ways, and one of the most important of these, is the mixing of this product with Portland cement.

"This mixture made up in different proportions can be used not only to replace hard wall plasters, but to replace Rosendale cement, and with many advantages to the user.

"To determine what strengths could reasonably be expected with different mixtures, Booth, Garrett & Blair, of Philadelphia, have made a series of tests recently, taking different proportions of Nazareth Portland cement, from the Lehigh district, and 'Limoid,' a hydrated magnesia lime, made at Cedar Hollow, Pa.

"A copy of these tests is shown herewith, as well as a copy of chemical analysis made by the same firm on 'Limoid,' and an analysis of these results is quite interesting.

Tests on "Nazareth" Cement and "Limoid" by Booth, Garrett & Blair.

These tests one part mixture, two parts sand, to make direct comparison with Standard Rosendale Cement Tests.

|             | 1 1/2 Lbs.<br>1 Part<br>Naz. | 1 1/2 Lbs.<br>1 Part<br>Naz. | 3/4 Lbs.<br>1 Part<br>Naz. | 3/4 Lbs.<br>1 Part<br>Naz. | 1 part Lbs.<br>1 part Naz.<br>("Spec'l") |
|-------------|------------------------------|------------------------------|----------------------------|----------------------------|--|
|             | Lbs.                         | Lbs.                         | Lbs.                       | Lbs.                       | Lbs.                                     |
| SEVEN       | 74                           | 94                           | 92                         | 122                        | 124                                      |
| DAYS        | 84                           | 110                          | 122                        | 140                        | 145                                      |
|             | 88                           | 98                           | 140                        | 168                        | 140                                      |
|             | 70                           | 100                          | 146                        | 102                        | 148                                      |
|             | 92                           | 106                          | 98                         | 116                        | 132                                      |
| Average.... | 81                           | 101                          | 119                        | 129                        | 137                                      |
| TWENTY-     | 144                          | 128                          | 178                        | 172                        | 158                                      |
| EIGHT       | 128                          | 150                          | 160                        | 180                        | 174                                      |
| DAYS        | 138                          | 140                          | 156                        | 162                        | 182                                      |
|             | 130                          | 146                          | 180                        | 104                        | 170                                      |
|             | 128                          | 154                          | 192                        | 186                        | 162                                      |
| Average.... | 134                          | 144                          | 173                        | 179                        | 169                                      |
| THREE       | 148                          | 130                          | 194                        | 174                        | 180                                      |
| MONTHS      | 168                          | 172                          | 235                        | ...                        | 166                                      |
| (88 days)   | 140                          | 160                          | 240                        | 188                        | 174                                      |
|             | 128                          | 184                          | 214                        | 190                        | 180                                      |
|             | 155                          | 124                          | 194                        | 170                        | 170                                      |
| Average.... | 148                          | 154                          | 217                        | 181                        | 174                                      |

\* Special—"Limoid" and Nazareth were ground for one hour in a ball mill.

Tests on Nazareth Cement alone, same as used in above mixture tests.

Seven days, one part cement, two sand :  
340, 345, 360, 354, 336. Average 347.

"The first four columns, reading from left to right, were made from samples of cement and 'Limoid' mixed by hand in proportions varying from 1½ of 'Limoid' with 1 of Nazareth, to ½ of 'Limoid' with 1 of Nazareth by weight.

"The fifth column shows results of a one to one mixture, with the 'Limoid' and Nazareth cement ground for one hour in a ball mill before mixing with sand and water. The main object in this was to get as nearly as possible a uniform and thoroughly mixed product.

"At the bottom of this table will also be noted seven days' test on the same sample of cement which was used in this mixture, using one part of cement to two parts of sand. This proportion of sand was taken in order to compare exactly with the one part of mixture to two parts of sand by weight used in all of these tests, and this basis of mixture was also used that direct comparison could be made with Rosendale or natural cement, which are generally tested with two parts of sand.

#### "Limoid"—Copy of Analysis.

Office of BOOTH, GARRETT & BLAIR, Analytical and Engineering Chemists, 404 Locust Street, Philadelphia, October 21, 1902.

CHARLES WARNER Co., Wilmington, Delaware.

Gentlemen: The sample of "Limoid" received from you a few days since, contained:

|                                  | Per cent. |
|----------------------------------|-----------|
| Insoluble matter .....           | 2.52      |
| Oxide of Iron and Alumina.....   | 0.56      |
| Calcium Hydrate .....            | 63.84     |
| Magnesium Oxide .....            | 32.20     |
| Carbonic Acid .....              | 0.59      |
| (Signed) BOOTH, GARRETT & BLAIR. |           |

"On the seven days' test it is quite uniformly shown that as the percentage of 'Limoid' increased, the strength decreased, which, of course, is a natural result as the strength of lime is naturally much less than Portland cement. This proportional increase is also shown on the 28-day test of all the samples mixed by hand, but on the three-months test a change is noted in the mixture containing the smallest per centage of 'Limoid' did not do as well as the ¼ 'Limoid' to one of cement.

"It is further noted that the increase in strength between the 28-day test and the three-months test is comparatively small, showing that the material had practically reached its full strength in 28 days.

"In the case of the one part 'Limoid' to one of cement, mixed by grinding for an hour in a ball mill, it is noted that it has attained far greater strength in the first seven days than the corresponding hand-mixed samples.

On the 28-day test, however, the advantage is comparatively small over the hand-mixed samples, and in three months it can not be stated that it has any advantage, with the exception of the greater uniformity in the results of the several briquettes. In other words, the variation between the maximum and minimum in the special sample is far less than in those which were hand mixed.

"In the sample containing 1½ parts of 'Limoid' to one part of Nazareth cement, it is noted by calculation that the cement only formed about 13 per cent. of the total dry mixture, as the 2½ parts of mixture were used with five parts of sand. In this same sample the 'Limoid' formed 20 per cent. of the total dry mixture.

"Going to the other extreme, where the proportions were ½ of 'Limoid' to one of cement, it is calculated that the cement formed 22 per cent. of the total dry mixture with sand, whereas, the 'Limoid' formed only 11 per cent.

"The difference in the three-months' test between these mixtures, 148 pounds in the first case, and 181 pounds in the last case, or 33 pounds, shows the per centage increase in strength in the case of the sample richer in cement to be only 23 per cent., whereas, the additional per cent. of cement is about 70 per cent., showing that considerable strength is given to the mixture through its proportion of hydrated lime; or, in other words, that the hydrated lime does not merely act as a filler, but has strong adhesive properties in addition.

"There are, of course, many other desirable features to be found in this mixture, among which might be named the following:

As a hard wall plaster the mixture has the property of not setting so quickly under the trowel, which in the case of the gypsum products causes considerable trouble, particularly in warm weather. It contains a large proportion of Portland cement, which has by all odds the best record for ultimate strength and durability. The mixture can be incorporated, of course, in its dry condi-

tion with both sand and hair, and be mixed ready for immediate use, the same as the present gypsum products.

"As a material to be used in the place of Rosendale or natural cement, it has a very important value to the builder, namely, that the presence of lime enables a brick layer or mason to spread the mortar far better than can be done with Rosendale cement, with an increased amount of work resulting from each man's services, which has ranged from 50 to 80 per cent. in the many cases where it has been tried, and which of itself has formed quite a handsome margin of profit to the builder above what he could obtain by the use of Rosendale cement.

The Portland cement and hydrated lime are slightly more expensive materials, but the saving in labor for any job greatly exceeds the additional cost of material in comparison with natural cement. This is a point any builder can test for himself, and in the cases where the above results were obtained, the cement and hydrated lime were mixed on the jobs by hand and all of such labor charged against the general result.

"By the use of mixing machines, which is now the tendency among dealers and manufacturers, a further advantage can be given to the contractor.

"It should be pointed out in this article that while there are several hydrated limes now being placed on the market, yet many of these hold water in excess of that required in chemical combination with the lime, and such uncombined or free moisture means not only a loss to the purchaser, but makes the hydrated lime unsafe when it is mixed with the cement in a dry condition prior to making up the mortar. When this is done, the cement immediately takes up the uncombined moisture in the hydrated lime, and the amount of cement so acted upon is destroyed, so far as strength is concerned. As practically one per cent. of water will usually set five per cent. of cement in such a mixture, as is shown, that from three to six per cent. of excess moisture in a hydrated lime would be dangerous within the limits shown by the above tests.

"There are, of course, methods of making hydrated lime which fully preclude the possibility of excess moisture: A reference to the analysis of 'Limoid' herewith should indicate to any chemist that all of the water present must be in chemical combination with the oxide of lime. At the same time, through specially devised testing apparatus, it is always determined that 'Limoid' contains less than one per cent. of free lime, and this small proportion is in such condition that it is completely hydrated within twenty minutes after mixing with water to form a mortar.

"It is evident from this that the per centage of water used in hydration must be carefully proportioned for each lime, and worked continuously within narrow limits.

"These last remarks are made that it may be clearly understood that any hydrated lime should have in its manufacture the same care exercised as has been found, not only desirable, but necessary, in the case of Portland cement manufacture, in order to produce an article that is at all times uniform and free from any substance that may be dangerous to the product either prior to its use, or after placing on the work.

"This article would not dwell so long on this phase of the question if it were not for the fact that there are fully ten ways of making an inferior and unsafe product, to one way of making a good, uniform article.

"Hit and miss methods of manufacturing will result in trouble sooner or later with any hydrated lime, and every purchaser should see to it carefully that he is purchasing a material of the proper standard."

The Crystal Carbonate Lime Co., of Louisiana, Mo., has been incorporated at Jefferson City, Mo., with a capital stock of \$100,000.00. The incorporators are: Charles C. Pratt, Richard H. Goodman and Ivan E. Pratt.

The Keystone Lime Co. has been incorporated at Birmingham, Ala., with a capital stock of \$25,000.00. The incorporators are: P. G. and M. Z. Hanahan, Birmingham, Ala., and J. R. Hanahan, of Charleston, S. C.

While prospecting for zinc and lead in the holdings of the Big Four Zinc Mining and Prospecting Co., near Harrisburg, Ill., N. W. Ferguson is said to have struck a five-foot vein of plumbago.

The Standard Lime Co. has been incorporated at Los Angeles, Cal., with a capital stock of \$50,000.00.

The Delphi (Ind.) Lime Co. has filed a petition in bankruptcy.

George Maas has leased lime kilns at Westphalia, Wis., and entered the lime business.

F. C. Cheney contemplates building lime works and possibly a crusher plant at Anniston, Ala.

A. Fisher, of New York City, has purchased the lime property owned by Dr. John Cipperly near Greenwich, N. Y., and will manufacture lime.

The Lee Lime Co., Springfield, Mass., is said to have completed another new kiln, and is putting in power and noisting apparatus to draw stone to the top of the kilns.

Reports from Whatcom, Wash., state that Mr. Cowle, a San Francisco, Cal., capitalist has bought property on the Orcas Island and will establish a lime plant.

The Black Hills Lime Co., Pringle, S. D., which has been making the lime out of the limestone of that vicinity for three years, is said to be enjoying a high degree of prosperity.

Lyon Bros., Menominee, Mich., enjoyed a very active season for lime the past fall and from the present outlook they will have to erect another kiln this spring to be able to supply the demand.

The Coble Lime Co. has been incorporated at Delphi, Ind., with a capital stock of \$20,000.00. The incorporators are: Richard Coble, Wilson T. Cooper, Milton C. Hockman, William R. Hines and Albert H. Coble.

Monger Bros., Hannibal Mo., have sold their interest in the Hannibal Lime Co. to C. C. Bishop and A. Newton, of Chicago, Ill. The plant will continue to be operated under the name of the Hannibal Lime Co.

The Mosher Lime and Stone Co., Campbellsport, Wis., has its plant at Byron, Wis., now in operation. At a recent meeting of the directors of the company H. M. Fellenz was appointed secretary to succeed W. D. Cornell.

The Jointa Lime Co., Glen Falls, N. Y., held its annual meeting February 16 and elected officers as follows: T. S. Coolidge, president; Frank W. Wait, vice president; A. N. C. Fowler, secretary and S. B. Goodman, treasurer.

The Nichola Lime and Fire Clay Co., Brookville, Pa., has been incorporated with a capital stock of \$30,000.00. The directors are: Charles E. Wortham, Jr., of Rochester, N. Y., Benjamin N. Clark and Arthur B. Stewart, of Brookville.

The Meacham & Wright Co., Chicago, Ill., has been incorporated with a capital stock of \$100,000.00, to manufacture and deal in lime, cement and building materials. The incorporators are: Florus D. Meacham, Frank S. Wright and Sylvester P. Blount.

The Rockland-Rockport Lime Co., Rockland, Me., is preparing to erect a plant at Dover, N. H., for making prepared mortar and plaster of different kinds. The plant will have a capacity of 1,000 tons a day, and will cost in the neighborhood of \$60,000.00.

Reports from Paducah, Ky., state that the marble and lime concentrating and milling plant, located in Graves county and owned by the National Lead, Zinc and Flourspar Co., Cleveland, Ohio, was destroyed by fire recently. The loss is estimated at \$18,000.00.

Reports from Mason City, Iowa, state that the Mason City Lime and Cement Co. has increased its capital stock from \$10,000.00 to \$25,000.00. This company was organized with the following officers: A. T. Lien, president; J. J. Long, secretary, and A. H. Gale, treasurer.

The Mankato (Minn.) Limestone Co., of which A. Bashaw is proprietor, enjoyed a good year in 1902, and are expecting to have even a better season this year. In addition to lime, and the stone sawmill that is operated for getting out building stone, the concern also deals in brick, sewer pipe, etc.

Reports from Parsons, W. Va., state that A. L. Helmick has been appointed receiver for the West Virginia Lime and Cement Co., which operates a plant at Hendricks, W. Va. The action for receivership seems to come as a surprise, for the business appears to be in a flourishing condition and it is probable that the receivership is simply a step taken to settle some differences between different interests. Reports state that John W. Gates and Henry E. Weaver, of Chicago, are heavily interested in the enterprise. The property is valued at \$1,500,000.00.



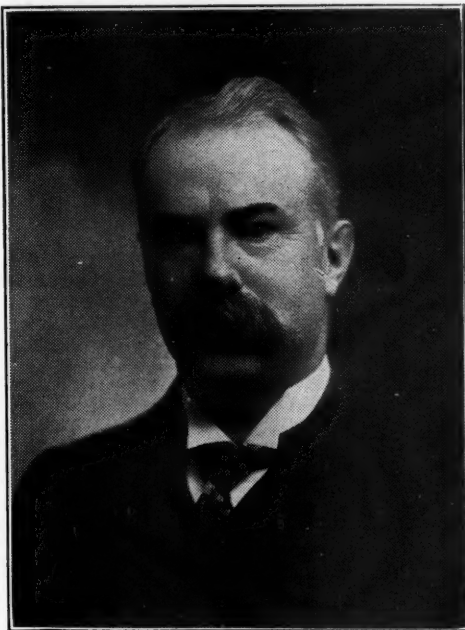
# A PLASTER ASSOCIATION

The National Plaster Manufacturers' Association  
Was Formed at Cleveland, Ohio,  
February 17.

YOU SHOULD BE A MEMBER.

## PRELIMINARY SESSION.

CLEVELAND, OHIO, February 17.—The gathering together at Hotel Hollenden, Cleveland, Ohio, on this morning was a peculiar one from the fact that there was scarcely one plaster manufacturer acquainted with the other. The representation came from enough sections to show that there was an interest in a national organization.



H. E. DINGLEY, SYRACUSE, N. Y.  
President, National Plasterers' Association.

After getting acquainted in the lobby of the hotel, the delegates present adjourned to the meeting room, and E. H. Defebaugh, of Rock Products, Louisville, Ky., in calling the meeting to order, stated that it was his belief that a national organization would be of general benefit to the trade, and suggested that a temporary organization be effected that the proceedings might be regular and bring out the objects of the meeting.

On motion, Jos. J. Mandery, of Rochester, N. Y., was elected temporary chairman, and E. H. Defebaugh, Louisville, Ky., temporary secretary.

Letters were then read from a number of manufacturers who were not able to be present, but who were favorable to a national organization, including the following:

Electric Plaster Co., Blue Rapids, Kas.; Rockford Wall Plaster Co., Rockford, Ill.; American Wall Plaster Co., Jeffersonville, Ind.; The Adamant Co., Portland, Ore.; the Adamant Plaster Co., Syracuse, N. Y.; Buffalo Paragon Wall Plaster Co., Buffalo, N. Y.; Marietta Plaster Co., Marietta, Ohio; Paragon Plaster Co., Syracuse, N. Y.; Paragon Plaster and Supply Co., Scranton, Pa.; Springfield Eureka Hard Plaster Co., Springfield, Mass.; Nephi Plaster and Manufacturing Co., Nephi, Utah; Wheeling Wall Plaster Co., Wheeling, W. Va.; D. J. Kennedy Co., Pittsburg, Pa.

The following representatives were present:

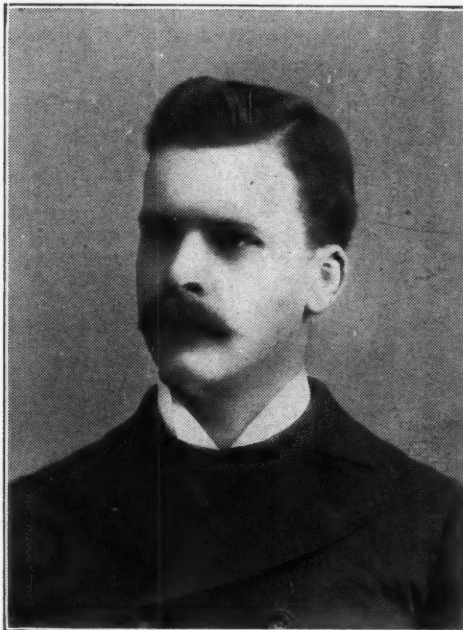
F. S. Culver, U. S. Gypsum Co., Chicago, Ill.; and Sandusky, Ohio; H. E. Dingley, National Wall Plaster Co., Syracuse, N. Y.; A. H. Lauman, Fitzgerald Plaster Co., Pittsburg, Pa.; Jos. J. Mandery, Rochester, N. Y.; B. F. McDonald and C. E. Cochran, Dresden Wall Plaster Co., Dresden, Ohio; L. G. Powell and L. E. Fishack, Fishack Plaster Co., Toledo, Ohio; G. S. Love, New Castle Elastic Pulp Plaster Co., New Castle, Pa.; J. W. Elsessor, Crown Wall Plaster Co., Braddock, Pa.; Jos. Leenhouts, Grand Rapids Plaster Co., Grand Rapids,

Mich.; Alexander Forrester, Forrester Plaster Co., Cleveland, Ohio; N. J. Ruggles, Rock Wall Plaster Co., Columbus, Ohio; J. M. Reams and W. S. Griswold, Elyria Wood Plaster Co., Cleveland, Ohio; Mr. Sharp, Sharp Bros., Youngstown, Ohio; A. W. Gallagher, W. O. Holst Builders Supply Co., Toledo, Ohio.

A motion was made that the association proceed to form an organization, which was seconded and passed.

A discussion on this motion, however, brought out the fact from the chairman that benefit was coming out of the organization in the building supply trade, who were built on the same mould, and they were getting better acquainted and there was less carving done. He continued: "By co-operation we might gain a better classification and thus lower the freight rates, which are more than they should be under the present classification, the question of bags could be better arranged in an organization, terms of sales adjusted, and all this would have the effect of probably extending the volume of the business where manufacturers co-operate together. It will eliminate hard feeling among competitors and bring about a friendly spirit, which will make it possible to reduce losses from unprofitable customers who make it a point to do everybody they can."

Mr. F. S. Culver spoke of the advantages of a national organization. He said it would develop the trade and create a larger demand for our product. It would also insure greater protection for the mixers, and there would be less loss of bags when we have some agreement as to return of same. By conservative effort we can handle our product more carefully and for the general good of all.



L. G. POWELL, TOLEDO, OHIO.  
Second Vice President, National Plasterers' Association.

Mr. H. E. Dingley brought out several good points, and said he was entirely in favor of the organization.

Alexander Forrester suggested that an agreement on credits alone would make a desirable object for a national body.

N. J. Ruggles thought it would be of benefit to all if a national organization was operated on the proper lines.

His remarks were concurred in by Mr. L. G. Powell.

B. F. McDonald remarked that no harm could come out of a national organization, and certainly some good would come.

Mr. Sharp, of Youngstown, Ohio, also favored organization.

Jos. Leenhouts remarked that he was favorably disposed toward organization.

The Chairman remarked that all could learn something by getting together, and it was his hope that a national association would be the means for doing so.

F. S. Culver remarked that on the question of freight, credits and bags, he felt sure that the United States Gypsum Co. would co-operate with the organization.

C. E. Cochran said he came to the meeting to get acquainted. They were eager to join anything that would benefit the business, and as it is

the fashion to have organizations nowadays, we certainly ought to be up-to-date.

J. W. Elsessor said his company was favorable to organization, as did G. S. Love, and the result was that a motion was made that a committee of three be appointed to submit plans at the afternoon session for a national organization.

The committee selected was Jos. Leenhouts, Grand Rapids, Mich.; F. S. Culver, Chicago, Ill.; and the secretary, was requested to act with them. The meeting then adjourned until 2:30 p. m.

## AFTERNOON SESSION.

Chairman Mandery called the meeting to order. B. F. McDonald, chairman of the committee, presented a constitution and by-laws, and, after some amending, the constitution and by-laws of the National Plaster Manufacturers' Association was adopted as a whole and the committee discharged with the thanks of the meeting.

## CONSTITUTION AND BY-LAWS OF THE NATIONAL PLASTER MANUFACTURERS' ASSOCIATION.

### ARTICLE I.

#### Name.

The name of this organization shall be: The National Plaster Manufacturers' Association.

### ARTICLE II.

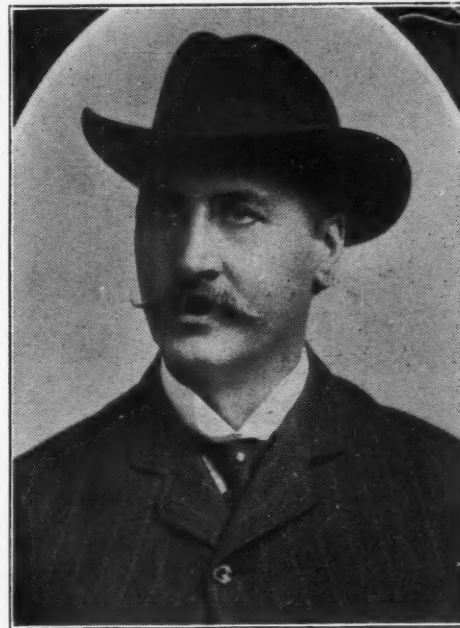
#### The Object of the Association.

The object of this Association is to promote social intercourse, discussion of all subjects of general interest to the trade, to organize and foster local associations, to secure equitable classification and better freight rates, to consider and adjust the troublesome bag question and mutually safeguard the extension of credit, to promote better methods in the manufacturing and sales department of its members; also the discussion of all special questions for the advancement of the interests of the trade.

### ARTICLE III.

#### Membership.

Any reputable manufacturer of hard wall or calcined plaster, operating as an individual, partnership or corporation, shall be eligible to membership in this association and entitled to one vote in the proceedings of said association, by making application and paying the membership fee and an-



ALEXANDER FORRESTER, CLEVELAND, OHIO.  
Treasurer, National Plasterers' Association.

nual dues in advance, providing he receives a majority vote of the Board of Directors present at any meeting, or their consent in writing.

### ARTICLE IV.

#### Officers.

The officers of this association shall be composed of a president, first, second and third vice presidents, secretary and treasurer, and a board of directors, consisting of not more than eleven members, which shall include all officers of the association.

## ARTICLE V.

*Meetings.*

The regular meetings of this association shall be held in January and July at such place as the Board of Directors shall decide.

## ARTICLE VI.

*Election of Officers.*

All officers and directors shall be elected annually by ballot at the regular meeting to be held in January, except the first election hereunder, which shall be held at such time and place as the association may desire.

## ARTICLE VII.

*Vacancies.*

In case of vacancy in any office, the same shall be filled at the next regular meeting of the association, at which a majority of the members present shall decide by a vote taken by ballot. Pending such action, the president may appoint a member from the directory to fill such vacancy.

## ARTICLE VII.

*Amendments.*

These articles may be amended at any regular meeting of the association, or at any special meeting by giving written notice to each member ten days in advance of such meeting.

## BY-LAWS.

## ARTICLE I.

*Duties of Officers.*

Section 1.—President—It shall be the duty of the President to preside at all meetings, to appoint special committees, call special meetings, and direct the work of the Association.

Sec. 2.—Vice Presidents—It shall be the duty of the Vice President, in the absence of the President, or ranking Vice President, to perform all the duties of the President.

Sec. 3.—Secretary—It shall be the duty of the Secretary to give notice to hold meetings at such times and places as they may deem proper, appoint committees on particular subjects on their own board or from the membership, to print and circulate documents, to raise funds and appropriate same, to employ agents, if necessary, and to devise and carry into effect such measures as they may deem expedient to promote the objects of the Association, and the Secretary and all agents or servants of the Association shall be at all times subject to their direction. And an Executive Committee shall be appointed by the Board of Directors, composed of the President, Vice Presidents, Secretary and Treasurer, to facilitate the work of the body.

Sec. 4.—Treasurer—It shall be the duty of the Treasurer to collect all money due the Association, and keep account thereof, to pay all bills when approved by the President, to make a financial report at each regular meeting.

The office of Secretary and Treasurer may be held by one man at the option of the Association.

Sec. 5.—Board of Directors—The Board of Directors shall have power to hold meetings at such times and places as they may deem proper, appoint committees on particular subjects on their own board or from the membership, to print and circulate documents, to raise funds and appropriate same, to employ agents, if necessary, and to devise and carry into effect such measures as they may deem expedient to promote the objects of the Association, and the Secretary and all agents or servants of the Association shall be at all times subject to their direction. And an Executive Committee shall be appointed by the Board of Directors, composed of the President, Vice Presidents, Secretary and Treasurer, to facilitate the work of the body.

## ARTICLE II.

*Revenues.*

The membership fee shall be \$5.00, the annual dues \$5.00. The funds necessary for special expenses of the Association shall be raised by assessment, which assessment is not to exceed \$5.00 a member per annum, unless a larger sum is voted by the majority of the members present.

## ARTICLE III.

*Salary.*

The officers of this Association shall serve without salary, provided that proper clerical help may be employed at the expense of the Association.

## ARTICLE IV.

*Amendments.*

These by-laws may be amended or changed at any regular meeting of the Association, by two-thirds vote of the members present.

As explanation of the fact that the officers and directors were elected for six months, this was to give new members of the association representation on the board, in order that the greatest good might be accomplished for its members.

It was then moved that we proceed to the election of officers, which was passed unanimously.

The following gentlemen were elected:

H. E. Dingley, Syracuse, N. Y., president; A. H. Lauman, Pittsburg, Pa., first vice president; L. G. Powell, Toledo, Ohio, second vice president; Jos. Leenhouts, Grand Rapids, Mich., third vice president.

When it came to the election of the secretary, according to the constitution and by-laws, an outsider could not be elected. In order to make it possible for E. H. Defebaugh to hold this office, a motion was made that he be made an honorary member of the association, after which he was elected to the office of secretary. Alexander Forrester, Cleveland, Ohio, was elected treasurer.

A motion was made to proceed with the election of directors to hold office until the July meeting. This was passed.

Those elected were: F. S. Culver, Sandusky, Ohio; N. J. Ruggles, Columbus, Ohio; B. F. McDonald, Dresden, Ohio; Jos. J. Mandery, Rochester, N. Y.; J. W. Elsesser, Braddock, Pa.; G. S. Love, New Castle, Pa.

Mr. McDonald objected to being a director from the fact that he was not active in the business, but we needed a lawyer, so he had to accept the office until the July meeting.

On motion, the secretary was instructed to get all the necessary stationary, and a list to be adopted by the committee, and be solicited for membership in the association.

This was passed unanimously.

On the selection of an official organ, on motion, ROCK PRODUCTS was adopted as the official paper of the association.

Chairman Mandery then selected a committee to escort the new president to the chair.

President H. E. Dingley remarked that it was a question of moving, and he hoped we would move forward. He illustrated his remark by telling a very good story, the point being, he was coming by freight, and so he could not express himself. He said: "However, I am in hearty sympathy with the organization." And he illustrated his interest by telling a story, that as individuals we could be broken like a stick, but as a collective body we could act and gain respect by our efforts.

He continued: "This organization should be the promoter of the industry of the hard wall plaster in making good goods, and by concerted action excellent results can be gained. We need the individual effort, however, of every member of the association, as well as their careful consideration of all subjects to promote the best interests of the trade. I wish to express my thanks for the honor conferred upon me and I will endeavor to do my best for the interest of the association."

On motion, the chairman was authorized to select a committee of three on freight rates and classification. This was afterwards amended and increased to five in order to get the ear of the railroads of all sections covered by the association. The committee selected were: F. S. Culver, chairman, Sandusky, Ohio; L. G. Powell, Toledo, and N. J. Ruggles, Columbus, Ohio.

Others are to be selected to fill this committee when the membership of the association is increased.

Both Detroit and Milwaukee were talked of for the next meeting of the association, but the matter was left in abeyance until a later date.

In speaking of a program for the next meeting, several subjects were suggested as valuable ones for those who attend the meeting.

A paper on Dryers, one on Mixers, and one on the Calcination of Plaster, were among those mentioned.

On motion, the chairman was authorized to select a committee of three on the program, one member to be the chairman, ex-officio. The other members selected were A. W. Gallagher, Toledo, Ohio, and W. S. Griswold, Cleveland, Ohio.

It was suggested that every member in the association be selected as a member of a membership committee to increase the membership of the association.

One member still thought he should not be a member of the directors, but Chairman Dingley replied that it was the busy man who generally was a success on a committee, owing to the fact that when he had anything to do he did it.

The minutes of the convention will be sent to those in attendance by the secretary.

A meeting of the Board of Directors was then announced at the adjournment of this meeting.

After seven hours' session, which was a very profitable and pleasant one, the first meeting of National Plaster Manufacturers' Association adjourned.

## DIRECTORS MEETING.

After some discussion the secretary was authorized to prepare a complete list of eligible members of this association, having it approved by the members of the board. Then those selected should be invited to join the association.

The members of the board of directors were then asked to furnish their comments on the association meeting to ROCK PRODUCTS for the March issue.

The chairman suggested that the next meeting of the board of directors ought to be held on the day preceding the July meeting.

On motion, the board of directors decided that it is the sense of their meeting that the actual hotel and traveling expenses of a committee or board of directors in attendance at special meetings be paid by the association; that no banquets or especial expenses at annual or semi-annual meetings of the association should be paid for out of the funds of the association. This was passed unanimously.

After an expression from those present that great good ought to come from this meeting, the meeting then adjourned.

## IMPRESSIONS OF THE MEETING.

It was harmonious, every interest represented in the meeting joining heartily in the movement, and becoming members of the association.

It was enthusiastic, promising much for the improvement of the plaster business. The lines on which the association is formed, and the objects as set forth in the constitution, will commend it to the support and the co-operation of all manufacturers. They are briefly: education, credits, freight rates, packages, machinery, the extension and enlargement of the uses of hard wall and calcined plaster; also the social features enabling the members of our trade to become better acquainted.

I confidently expect that the committees appointed will aid materially in helping to solve the knotty questions, of proper classification of our products, and the establishment of freight rates on an equitable basis, as well as to devise some plan by which the losses from bad debts may be greatly reduced.

Personally, it was a great pleasure to meet my associates and confer with them on the vital questions relating to our business interests. I am confident that every member of the craft will join the association, and aid in every way to make it strong and influential in improving the important business represented by the plaster manufacturers of the country.

With kind regards and assurances that every effort on your part to still further promote and establish the association on a sound and abiding basis will be appreciated and furthered, I remain,

H. E. DINGLEY."

"Referring to the Cleveland Convention, beg to advise that the feature of same that commanded our most serious consideration was the fact that after manufacturers in any line of trade meet with their competitors they can not help but realize the worth of the old maxim to "Live and let live," as there is nothing so conducive to a rational view of a proposition as to have an opportunity to hear a question discussed from every point of view, and by so doing learn something new, notwithstanding a lengthy experience in the trade.

L. G. POWELL."

The Winters Gypsum Co. has been incorporated at Sandusky, Ohio, with a capital stock of \$100,000.00. The company will open an office in the Kingsbury Block, Sandusky, Ohio.

The Gypsum Cement Plaster Co., of Quanah, Tex., has taken out articles of incorporations with a capital stock of \$500,000.00. The incorporators are: J. A. Pardue, president; E. H. Godfrey, secretary; both of Quanah, Tex., and James A. Black, Abner E. Anson and Charles W. Embrey, all of Washington.

The Elastic Pulp Plaster Co., has let contracts for building a plaster plant at Seventh street, north of Logan, Steubenville, Ohio. The organizer of the Elastic Pulp Plaster Co. is Mr. J. A. Pugh, of Warren, Ohio, but many of the stockholders are Steubenville people. The plant is to have a capacity of 30 cars a month.



# Cement.

## The Past, Present and Future of Cement.

(NOTE—For lack of space last month we could not print in full the interesting paper on this subject by Mr. John C. Robinson, which made up a part of the proceedings at the joint meeting of manufacturers and dealers at Indianapolis, and the following is a continuation of that paper.—Ed.)

No attempt was made to produce Portland cement in the United States until 1873. In that year a small mill was erected at Kalamazoo, Michigan, using marl and clay as materials; in general, English methods being adopted, but the cost of operation was high, the demand small and after a few months the plant was abandoned.

At about the same time, however, another mill began operations and has continued as a producer up to the present time. This was the Saylor plant in the Lehigh Valley district. In this section of Eastern Pennsylvania, extending into the contiguous portion of New Jersey, is a practically unlimited deposit of argillaceous limestone, closely approaching a normal Portland cement mixture. For some time previous to this date, natural cement had been produced from certain parts of the deposit and Mr. Saylor was operating a mill of this character when he undertook the manufacture of Portland. Conditions were vastly different then in Europe and progress was slow; but following in general European practice, he was producing by 1876 a cement that compared favorably with the imported article.

The older methods of production were, however, so laborious that it was hardly feasible, with existing American wages, to compete with European cement, and while a few additional mills were started during the following decade, we continued to import most of our Portland cement.

In 1868, Dr. Siemens experimented with a revolving furnace. Nothing came of it at the time, but in 1886 a rotary kiln was installed in the White Works, below London. It was of small size and fired with a gas producer. The fuel consumption was excessive and it was finally abandoned. It served to show, however, the possibilities of this method of burning. Within two or three years it was taken up in this country, oil being substituted for producer gas, and much larger kilns being used. It was rapidly brought to perfection and proved the one stroke necessary to adapt Portland cement manufacture to American conditions. The fuel consumption was treble that of good continental practice, but the labor cost was cut in two, the process greatly simplified and the product at the same time improved.

Many other labor saving devices rapidly followed, new types of grinding machinery were developed, and from that time on the industry has increased by leaps and bounds.

The price of oil soon increased to such an extent that its use had to be abandoned, but in the meantime powdered coal was found to be a satisfactory substitute.

In the year 1890, there were produced in the United States less than 350,000 barrels; in 1896, for the first time the output exceeded a million barrels. The following year it had risen to two and one-half millions; in 1899 to five and one-half millions; in 1900, between eight and nine millions; in 1901 to eleven millions, and during the past year fully fourteen millions have been turned out of American works.

The American plants to-day lead the world in mechanical efficiency, and though we are paying much higher wages per diem than European plants, our cost of production per barrel of cement, is materially less than theirs.

In general, modern American practice is as follows: The materials are crushed, dried (in marl mills they are usually ground wet) and accurately weighed together. The mixture is then ground to a flour and automatically conveyed to the kilns. These consist of huge revolving cylinders internally fired with powdered coal. The hot clinker is either elevated from these or drops to coolers. On

cooling it is crushed and ground to a flour. The output per man is fully five times as great as in the earlier English mills, and the operation consumes but a few hours, while there weeks or months are employed. The entire operation is under complete or immediate control and the resulting cement superior in strength and uniformity.

Cement testing differs from that of almost all other materials, for the reason that cement is not, so to speak, a finished product. Tests should, so far as possible, determine not what it is, but what it will be or do under certain hypothetical conditions. Tests are of two general classes—chemical and physical.

The former are rarely made outside of mill or scientific laboratory, but are of great value in showing amounts of magnesia and sulphur present, normal proportions of the essential elements, and freedom from carbonic acid and combined moisture. In other words, that the raw materials and fuel were suitable, that proper care was taken in their proportioning, that gypsum had not been added in excess, that the burning has been thoroughly carried out, and that the cement has not deteriorated from exposure.

The physical tests are of more general application, and may be divided into three general classes: The first being the test of the cement as it is, namely, its specific gravity and fineness; the former of these showing proper burning and freedom from adulteration; and the latter, sand carrying capacity. The second class attempts to copy, as nearly as possible, the conditions found in actual use, the cement being mixed neat or with certain proportions of sand, placed in moulds and their strength determined after certain periods. As cement is practically always used in compression, strength tests really should be compressive ones. A much more elaborate apparatus, however, is required to make compressive than tensile tests and the personal equation of the tester enters more largely into it. As a result, tensile tests are employed almost entirely.

The third class of physical tests, known as accelerated or hot tests, are used largely by cement manufacturers, and while the exact results obtained from them may be of question, they furnish valuable data as to the character of a cement.

If cement is of reasonably good grade and properly used, the matter of exact tensile strength is of minor importance; but should the cement disintegrate, tremendous damage may be caused. It is ordinarily impossible to hold samples of cement long enough to thoroughly test it in this respect under normal conditions. The accelerated tests have been devised to, so far as possible, accomplish this result. Disintegration is ordinarily due to an excess of lime, coarse grinding or improper burning; compounds being formed after a certain length of time that will rupture the concrete, of which the cement is the base. Exposure to heat, either dry or in the form of steam, tends to accelerate the time within which this disintegration will take place; and while some cements that fail under the heat test will give satisfactory service, it is reasonably safe to assume that any cement standing up properly under them (when properly carried out), can be thoroughly depended upon.

You are, however, thoroughly conversant with this subject and I can only impress upon you that there are but two essential tests for a cement. First and most important, soundness; and secondly, fine grinding; or in other words, sand carrying capacity. Upon these two attributes depend the safety and economy of all concrete construction.

In regard to the future uses of cement, they are developing so rapidly that it is almost impossible to keep pace with them. The statistics that I have given show this fact, and yet we have made but a beginning. While we are producing in this country almost fifty times as much cement as we did in 1890, we are still consuming less than one-half as much per capita as Germany, and I believe the time is not far distant when we shall use a barrel of cement per individual annually. Wood, stone, brick and steel, the great building materials of the past, all feel its influence, while the increasing demand for better roads, better sewers, better water supplies, more permanent railroad construction and better homes all tend to this same end.

The Kentucky Portland Cement Co., Louisville, Ky., has been incorporated under the laws of Delaware with a capital stock of \$900,000.00. The officers of the company are: C. J. Meddis, president; Judge Asher G. Caruth, vice president; C. B. Vordeman, secretary-treasurer. A tract of land has been purchased near Marengo, Ind.

The Great Northern Portland Cement Co., Baldwin, Mich., will start their plant some time this spring.

The National Portland Cement Co., Ann Arbor, Mich., has been incorporated with a capital stock of \$1,500,000.00.

The Struthers Furnace Co., Struthers, Ohio, is said to be building a cement works which will be under the charge of George B. Hooker, Syracuse, Ind.

The Georgia Portland Cement Co., of which W. E. Dorwin is president, is preparing to erect a cement plant at Cartersville, Ga., with a capacity of 1,200 barrels a day.

It is said that building operations are flourishing at the plant of the Hudson Cement Works, Catskill, N. Y. When the plant is completed 500 hands will be employed.

The West Ontario Portland Cement Co., of Atwood, Canada, has been incorporated with a capital stock of \$500,000.00, by J. A. Mitchell, M. M. Hiles, D. A. Kidd and T. G. Ballantyne.

The American Cement Co., which has its main office at 22 South Fifteenth street, Philadelphia, Pa., and works in the Lehigh Valley district, is now figuring on building a cement plant near Norfolk, Va.

The firm of J. L. Fulton & Co., Chicago, Ill., has been incorporated with a capital stock of \$25,000.00, to construct cement paving. The incorporators are as follows: J. L. Fulton, Edward G. Hansen and George E. Ruths.

Reports from Allentown, Pa., state that the Penn-Allen Cement Co. is pushing work at its new plant and expect to make cement by next July. They are excavating for building and erecting a dam.

The Crescent Portland Cement Co. is making improvements at its plants at Wampum, Pa., adding more power and additional grinding machinery. When the improvements are completed the plant will have a capacity of 500 barrels a day.

The firm of Stephens, Cooper & Co. has been incorporated with temporary offices at 419 Market street, Camden, N. J., with a capital stock of \$50,000.00, to manufacture lime, cement, etc. The incorporators are: Henry C. Stephens and J. N. Fitzgerald.

The Cuban Concrete Co. has been incorporated with offices at 191 Cooper avenue, Upper Montclair, N. J., to manufacture artificial stone with a capital stock of \$50,000.00. The incorporators are: Thos. R. Russum, Wm. Lidstrom, R. H. Calder and Chas. A. Buck.

The Nazareth Cement and Limestone Co. Nazareth, Pa., has been incorporated under the laws of New Jersey with a capital stock of \$100,000.00. The incorporation office is 419 Market street, Camden, N. J. The incorporators are: Albert S. Robenold, Franklin C. H. Schwyer and Wm. H. Dishier.

The Hecla Portland Cement Co., Detroit, Mich., has re-elected its old officers, with Julius Stroh, president and E. H. Parker, secretary-treasurer. The company's plant at Bay City has begun manufacturing cement with a capacity of 1,200 barrels a day and expects to increase it to 2,500 barrels.

The Rochester Portland Cement Co. has been incorporated at Rochester, N. Y., and contemplates erecting a plant between Rochester and Marletown, with a capacity of 1,000 barrels a day. The capital stock of the company is \$400,000.00. The directors are as follows: C. J. Curtain, of New York, F. H. Doremus and C. M. Carhart, of Kings-ton.

The Southern Portland Cement Co., Atlanta, Ga., is building a plant at Rockmart, Ga., to cost \$1,000,000.00, to manufacture Portland cement, and it is expected that the plant will be in operation by July 1. The officers of the company are: W. F. Cowan, of Jackson, Mich., president; Frank Hawkins, Atlanta, vice president; John W. Broadman, Jackson, Mich., treasurer; Hugh F. VanDeventer, Knoxville, Tenn., secretary.

A report comes from Toronto that the Canadian manufacturers of Portland cement will make an effort to secure the Canadian trade for themselves. Last year American cement to the value of \$699,000,000.00, to manufacture Portland cement, and it per cent. The Canadian manufacturers will not seek to increase this duty, but will ask the Government to make strict interpretation and enforcement of existing laws with regard to undervaluation.



The Florence Portland Cement Co., Florence, Colo., is manufacturing cement just below that city. The company has been incorporated by the following Florence men: J. Q. McDonald, Dr. J. W. Cline, E. H. Carpenter, J. E. Broadhead, W. C. Parker, William Kelso, Joseph D. Blunt and W. H. Kelso. The plant will have a capacity of 1,000 barrels a day and employ 150 men. The company owns 440 acres of land, which contains deposits of shale, high lime and clay.

The Glen Falls Portland Cement Co., Troy, N. Y., recently held a meeting and elected the following directors: Capt. W. W. Maclay, Byron Lapham, A. W. Sherman, John E. Parry, William McEchelon, Wm. H. Robbins, Arnold Wurtzburg, George H. Parks, E. B. Potter, Frank W. Wait, Theodore S. DeLong, Samuel B. Goodman. The following officers were also elected: Captain Maclay, president; Mr. Lapham, vice president; Mr. Sherman, treasurer, and Mr. Parry, secretary.

The Toledo Portland Cement Co., Toledo, Ohio, has been incorporated under the laws of Michigan, with a capital stock of \$500,000.00. The incorporators are: William Watts, W. O. Holst, Jacob N. Bick, S. R. Easterday, Albert W. Butler, John Rochford, C. M. Colley, George T. Butler and R. T. Von Volkenburg. The following officers were elected: Dr. William Watts, president; W. O. Holst, vice president; John Rochford, second vice president; Albert W. Butler, secretary-treasurer; R. T. Von Volkenburg, general manager; John A. Garver, general counsel; and R. C. Carpenter, of Ithica, N. Y., constructing engineer. The company has purchased 800 acres of land near Manchester, Mich., about forty miles from Toledo, and expect to erect a big waterpower cement plant. The company's headquarters will be at Toledo in the Nasby Building, and they expect to be ready for operation by April 1.

### SAND.

G. G. Gifford has sold his sand bed near Boonville, N. Y., to Frank Gallop, of Elizabeth, N. J.

A. R. Mense, a contractor of Kansas City, Mo., has bought out the holdings of the independent Sand Co., St. Joseph, Mo.

The Potomac White Sand Co., of which Thos. H. Hobbs, of Cumberland, Md., is president, has received machinery for its sand works at Green Springs, W. Va., and will likely soon be ready to operate.

J. L. Turner, of Beausejour, Manitoba, Canada, has been figuring with the aldermen of Winnipeg, Canada, with a view to furnishing that city all the sand they may require this year, and at this writing it looks like he will get the contract.

The Garden City Sand Co., Security Bldg., Chicago, Ill., say that the cost of producing sand and handling it has increased so that they will be compelled to withdraw all former quotations the first of the year and make new figures that will be more in keeping with the added cost of production.

The National Sand and Marble Co has applied for incorporation through Attorney Jacob L. Vogelty, 518 Fourth avenue, Pittsburg, Pa. The company proposes to furnish sand, marble and cobble stone, lime and limestone and other material. The incorporators are: Frank L. Vogelty, Edwin B. Vogelty and Chas. W. Smith.

The American Filter Sand Co., Millville, N. Y., has been incorporated with a capital stock of \$100,000.00. The officers of the company are: J. H. Limpincott, Philadelphia, Pa., president; C. B. Wilson, Melville, N. J., secretary-treasurer. The company claims to have a fine grade of filter sand in great quantities, which will be put on the market.

Ed. Heyde is organizing a company at Billings, Mont., to manufacture sand brick.

### Opening a New Quarry.

P. Linehan & Sons, Greystown, N. C.—Our business was very satisfactory last season. We are opening another quarry near Middlesburg, putting in about \$1,500.00 to \$2,000.00.

### Had a Very Satisfactory Business.

Linehan, Bourke & Co., Greystone, N. C.—Our business the past year was very satisfactory; think we got out a fourth or a third more than last year. There is one new quarry being opened.

## ROOFING.

### "What Do You Know About Roofing?"

For some time now we have had one eye on the roofing end of the building supply business, but the press of other matters has kept us from giving it the attention it merits. Now, this is the time of the year when the roofing question just naturally forces itself forward, at least the weather forces attention to roofs that are faulty, and it is a very appropriate time to start the ball rolling in the way of discussion about roofing and roofing material. Last month we wedged in the question, "What do you know about roofing," in reply to which J. M. Elliott, 411 Blue Island Avenue, Chicago, who makes a specialty of felt and composition roofing, comes back at us with the following:

"In your issue of February, 1903, page 7, 'What do you know about roofing?' I have been in the roofing business for eighteen years, and there have been many been many prepared roofing felts put upon the market; some good, some otherwise. I have had an experience with a number, and find there is none can fill the bill with a felt composition and gravel roof properly put on.

"We have roofs here in Chicago. Roofs of felt composition and gravel that were put on the year after the Chicago fire (1872) that are in fair condition yet, and the cost for repairs have been very small to the original cost of roof.

"Most all prepared roofing must be looked after every year, and must have a coat of tar every two years to protect the felt; otherwise, it becomes water-soaked or spongy; especially if on a flat roof. The result is a new roof must be put on.

"A composition roof, or felt composition and gravel (crushed stone is better—it can be obtained most any place now, and I prefer it to gravel on both flat and steep roofs), after it has been put on you are not under any expense for repairs, for from five to ten years, and then it can be renovated for about forty per cent. of original cost and will be good for five or more years longer.

"When it becomes necessary to have a new roof, it don't take half the labor to take it off as does roofing that is nailed to the roof boards, an item of expense that should be considered when you may have roofing to be done. I mean by the word composition, rosin and tar, which is the foundation of all roofing felts."

Whether this "will be about all from him for a while" or not, we do not know, but we want to hear from others, both manufacturers of roofing and dealers in building supplies on the subject of roofing generally. There certainly is something to be gained from such a discussion, for there is a confusing variety in the different materials offered for roofing, and some of it is surely better for some special uses than others, while the others may be better for other uses—the thing we want to know is what is best, price and all considered for specific purposes.

Not only is there the matter of roofing itself, which may be considered all along the line, including shingles, metal roofing, asphalt and all kinds of composition, etc., but there is the subject of roofing paints that should be interesting right now. People who have roofs—and who has not—will now be looking them over, and many will be painting. So the dealers in building material will be called on for paints—and what should they be? If there are points about various roofing paints not generally known to dealers, they will be glad to hear about them, and the makers of the paints, as well as the users should, in the interest of more intelligent handling of this article, tell us things they know that are worth making public. In short there is nothing like swapping ideas with the other fellow to bring out all the points in business, and this applies to roofing as well as to any other line of business. Then, let us have this swapping of ideas right in these columns.

The Asbestos Roofing and Covering Co., of St. Louis, Mo., has been incorporated with a capital stock of \$20,000.00, by W. W. Culver, C. A. Hankie, C. C. Nichols.

The George A. Robinson Contracting Co., originators of the Robinson Composition Roofing, has been incorporated at Mobile, Ala., by George A. Robinson and others.

The Excelsior Roofing Co. has been incorporated at St. Louis, Mo., with a capital stock of \$12,000.00. The incorporators are: Charles Rubicam, Ernest J. Williams and M. E. Ross.

## CONCRETE.

The Cleveland Concrete and Building Block Co., Cleveland, Ohio, is figuring on building a branch plant at Buffalo, N. Y.

George L. Brown, John Bown and H. Jacob, of Whatcom, Wash., are figuring on establishing a sand brick factory at Northern Yakima, Wash.

The Tazewell and Peoria County Artificial Stone Post Co., Pekin, Ill., expects to build a factory at Morton, Ill., for the manufacture of artificial stone posts.

It is reported that the deputy building inspector, W. Coleman, of Cincinnati, Ohio, has perfected a method of manufacturing concrete which he will have patented.

Flatley Bros. & Co., Green Bay, Wis., have purchased the right to make artificial stone by the Stephens Process, covering territory in the Northern part of Wisconsin.

The Saginaw (Mich.) Sandstone Brick Co. is now manufacturing about 14,000 sand brick a day and are said to be making preparations to double its output by running night and day.

The firm of J. F. Fulton & Co., Chicago, Ill., has been incorporated with a capital stock of \$25,000.00, to manufacture cement paving. The incorporators are: J. L. Fulton, E. G. Hansen and G. A. Ruths.

The Venter Concrete Co. has been incorporated at Atlantic City, N. J., with a capital stock of \$250,000.00. The incorporators are: Elmer E. Stanton, Grand Rapids, Mich.; H. Demar Schuff and Harry I. Rapp, Atlantic City, N. J.

The Miller-Marable Twentieth Century Manufacturing Co. has been incorporated at Asheville, N. C., with a capital stock of \$20,000.00, to manufacture artificial stone, concrete, etc. The incorporators are: C. H. Miller, D. T. Marable and others.

The Wichita Hydraulic Stone and Brick Co., Wichita, Kan., that began business last October, in November made over 30,000 pieces of building stone, and as soon as spring opens they will make cement brick, window sills and caps, frieze and cornice, curbing and gutter, and all kinds of ornamental stone.

### Just Working Away as Usual.

A. H. Ford, Hulburton, N. Y.—My output of stone from the quarry has been larger the past year than it was in 1901, but there has been no special line of new work and I am not making any particular changes in my quarry operations. One new quarry, that of the Orleans Sandstone Co., has been opened up here.

## SLATE.

The Ontalaunee Slate Co. is erecting a plant at their quarry at Lynport, Pa.

The Bittner Slate Co. has purchased the slate quarry of R. F. Thomas, of Slatedale, Pa.

C. J. Heinz and E. R. Lines, of Wheeling, W. Va., will develop slate property near Martinsburg, W. Va.

The Eureka Slate Co., Placerville, Colo., will erect a cableway for transporting slate from its quarry.

G. A. Woltman, York, Pa., is said to have discovered a vein of slate while digging a well on land purchased by him out in the suburbs and he will develop the slate property.

The Franklin Slate Co., Slatington, Pa., has been incorporated with a capital stock of \$24,000.00. The directors are: Ellis Owens, Robert G. Pierce, Joseph Richards, Richard W. Jones, Daniel E. Richards, and David William, of Slatington.

The Poultney Consolidated Slate Co., Poultney, Vt., recently held a meeting and elected the following officers: C. W. Perry, president; D. J. Williams, vice president; B. R. Jones, treasurer; W. H. Lloyd, secretary, and W. H. Hughes, manager.

The American Slate Co., East Bangor, Pa., which operates seven quarries in the Pennsylvania slate region, is adding to the improvement of its equipment for this season's business. They inform us that they are desirous of experimenting with clam shell buckets in connection with cableway derricks, an application of mechanical appliances that has not heretofore been used in slate quarries for removing rubbish.



## The Slate Belt of Arkansas.



MONG the undeveloped and partially developed resources of Arkansas which promise to do great things in the future in the way of bringing that State to the front, there is none that give promise of greater immediate development than the slate deposits in the Western part of the State. These slate deposits begin at a point eight or ten miles east of Mena, Polk county, and the general belt is

described as being about five miles in width and twenty miles long, trending south of northwest and north of southeast. This description is based on present knowledge, however, and as developments have only just begun in this slate belt, there is necessarily a large element of guess work about the location and extent of the deposits as a whole. It is evident that the United States Geological Survey has not made any extensive exploration of the field, unless the work was done during the past year, for there is no mention whatever made of Arkansas in the report of this institution for 1901. This does not tell anything further than that exploration and development in Arkansas slate is now in its infancy, but from the reports coming up out of that State, we judge it will have a place in the slate reports of the future.

The center of activity, if not the center of the slate belt, at present seems to be Slatington, Ark., and the most active concern in the field at that place; in fact, the makers of the town itself is the Southwestern Slate and Manufacturing Co. This company owns 600 acres of land in the slate belt, which it is actively developing, opening quarries, building plants for manufacturing structural slate, etc., and while they are doing this a railroad company is building a road that will furnish shipping facilities. Mr. Curtis Wright is president of the Southwestern Slate and Manufacturing Co., and N. F. Wright is secretary. The company is capitalized at \$500,000.00, and seems to be progressing nicely. We have before us samples of slate furnished by them, in black, green and red; also copy of analysis made of samples from their properties made by Dr. J. R. Moochel, of Kansas City, Mo. The samples look all right, and if they stand the tests called for by slate experts, we may naturally expect to hear of them finding their way over the country at a pretty lively rate in the future, for according to the descriptions at hand, the deposits seem to be very favorable to economic production. From pictures furnished by the above company, it is evident that the slate is not only found near the top of the ground, but actually outcropping, so that instead of having to mine it as they do in the Eastern slate field, the work takes on more of the nature of quarrying, pure and simple. The country at Slatington is described as being a mountain, 3,000 feet above sea level, composed of about four-fifths slate, which is in four veins that run solid, and are very thick. Some idea of the favorable condition of this deposit for working

may be had from the fact that channeling machines are talked of for getting it out—which means that it lays practically level.

Just how the different colors are distributed throughout this slate belt is not very clear from the description at hand, but there seems to be plenty of each color. Of the land of the Southwestern Slate and Manufacturing Co., it is said that 480 acres contains an outcrop several miles in length of red and green slate from 100 to 500 feet in thickness. The other 120 acres, coming within half a mile of the quarry already opened in red slate, is underlaid with black slate to an undetermined thickness. The black slate is said to grade from soft school slate to hard roofing stock. The red slate seems to be the most abundant, and is usually interstratified with green. Some idea of the work this company has already done in the way of developing its property, and of the way they look at the proposition before them, may be gained from the following extracts taken from a letter written by one of the management to an interested friend after a trip to the slate quarries, in the East:

"We have placed orders for the following machinery: Two seventy h. p. return tubular boilers; one Rand Imperial type No. 10 111 h. p. air compressor with duplex steam and cross compound air. Two large air receivers (one of these to go up on hill); Cookson water heater; Snow feed pump; Sullivan channeler and two Rand drills, and all of the fittings and fixtures complete. We have yet to place our order for several cableways and hoisters which will no doubt be done the latter part of this week. This machinery does not include by any means all that we intend to install, but is about all we can handle this winter. As

it is this will fit us for a very large business but not for the immense business we will be drawn into when we once put our slate upon the market. A good part of the heaviest machinery we will have to install later, we will probably not try to bring in before we get a railroad, but that time we all think will not be in the far distant future. \* \* \* Have seven splitters at work and expecting more to follow shortly. This gives us about 35 squares of roofing slates per day. So with even this small number of men working we will be prepared to "tap" the market before a great while. We are preparing to put up several large shanties at the bottom of the hill across the gulch in which we will put at least sixteen splitters in each. All of the dressing machines we propose to run by power. This will be done as soon as cableways are placed in position.

"We are opening up our black slate, and it is certainly the finest stuff that I have ever seen in the slate line. It is as black as anthracite coal and as tough as sole leather. \* \* \* I thought that I knew the worth of our property before I made this trip East, but now I know I was mistaken. Anyone knowing our property and then making a thorough investigation of the Eastern fields, knowing the amount of business they do and knowing also the demand for slate, can imagine the amount of business we will be doing here in the course of a year or so.

"It is our intention to work up our waste material into paint and brick, thereby using the highest type of business economy. A finer paint was never made, particularly for steel and iron, as the silica in this paint seems to adhere to the iron by a chemical union. Any slate paint will do this but ours has the advantage of having no grit."

## Analysis of Slates of Southwestern Slate and Manufacturing Co.

BY DR. J. R. MOOCHEL, KANSAS CITY, MO.

|                          | No. 1   | No. 2   | No. 3   | No. 4   | No. 5   | No. 6   | No. 7   |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|
| Moisture.....            | 0.18    | 0.465   | 0.835   | 0.240   | 0.230   | 0.570   | 1.005   |
| Carbon dioxide.....      | 0.085   | 0.107   | 0.724   | 0.107   | 0.003   | 0.006   | 0.013   |
| Sulphur as Sulphate..... | 0.078   | 0.437   | 0.058   | 0.020   | 0.057   | 0.045   | 0.045   |
| Sulphur as Pyrite.....   | 0.015   | 0.013   | 0.003   | 0.014   | 0.014   | 0.042   | 0.026   |
| Alumina-insol.....       | 2.427   | 5.745   | 5.045   | 4.545   | 3.135   | 2.655   | 4.845   |
| Alumina-soluble.....     | 6.195   | 8.515   | 7.615   | 6.855   | 7.285   | 8.936   | 11.915  |
| Ferric oxide.....        | 6.330   | 4.040   | 4.395   | 5.645   | 3.907   | 5.345   | 5.125   |
| Ferrous oxide.....       | 3.435   | 1.155   | 1.300   | 1.040   | None    | None    | None    |
| Calcium oxide.....       | 0.595   | 0.595   | 0.560   | 0.570   | 2.175   | 0.485   | 0.625   |
| Magnesium oxide.....     | 0.006   | 0.888   | 1.017   | 2.027   | 3.011   | 1.134   | 0.877   |
| Soluble Silica.....      | 0.074   | 0.012   | 0.024   | 0.094   | 0.030   | 0.020   | 0.110   |
| Silica.....              | 66.086  | 68.780  | 69.020  | 68.980  | 67.872  | 63.980  | 63.120  |
| Ferric oxide.....        | 2.715   | 2.855   | 4.155   | 2.015   | 2.315   | 7.365   | 4.415   |
| Calcium oxide.....       | 1.175   | 0.805   | 1.185   | 0.985   | 0.996   | 1.075   | 1.125   |
| Magnesium oxide.....     | 0.769   | 0.541   | 0.856   | 1.116   | 1.330   | 0.892   | 0.638   |
| Potassa.....             | 4.960   | 3.086   | 2.976   | 3.380   | 4.110   | 1.360   | 1.430   |
| Soda.....                | 0.640   | 0.094   | 0.094   | 0.960   | 0.690   | 0.640   | 0.700   |
| Carbon.....              | 2.100   | 2.006   | Trace   | None    | 1.781   | 4.030   | 3.701   |
| Loss.....                | 2.297   | 0.861   | 0.138   | 0.907   | 1.060   | 1.421   | 0.285   |
| Total.....               | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 |

No. 1 is green slate from quarry No. 2—A good slate.

No. 2 is red slate from quarry No. 2—Very good slate.

No. 3 is red slate from State House Cove—An excellent slate.

No. 4 is red, hard slate from State House Cove—An excellent slate.

No. 5 is green slate from State House Cove—Very good slate.

No. 6 is black slate from West end of Crooked Creek vein—A good slate of its kind.

No. 7 is black slate from Crooked Creek Falls—Also very good slate of its kind.



TYPICAL VIEWS IN THE SLATE BELT OF ARKANSAS.

# Stone.

The Equitable Trust Co., Chicago, Ill., has been appointed receiver for The Delaney Stone Co.

The Meyers Stone Co., Joplin, Mo., has increased its capital stock from \$5,000.00 to \$20,000.00.

The office of the Rutland-Florence Marble Co. has been transferred from Rutland to Florence, Vt.

It is reported that the Callion Limestone Co., Calion, N. J., has added \$5,000.00 to its capital stock.

The Keystone Marble Co., Lebanon, Pa., will put in machinery to double its output of building stone.

E. P. Rasmussen, Roswell, New Mexico, is putting in stone saws and other machinery at his quarries.

Meade & Funk have organized a stone company and opened offices in the Batavian bank building, LaCrosse, Wis.

The Pike Manufacturing Co., Syracuse, N. Y., recently bought at sheriff's sale the oil stone factory in Manlius.

The McCarthy Stone Co., Davenport, Iowa, have moved their offices from the Masonic Temple to room 53 Schmidt Building.

The plant of the Massachusetts Broken Stone Co., Salem, Mass., was damaged by fire to the extent of \$5,000.00 last month.

Thym Cutstone Co., St. Louis, Mo., has been incorporated with a capital stock of \$12,000.00, by Henry Thym and others.

Reports from Olive Bridge, N. Y., state that Oliver Yale of Rondout, is opening a large blue stone quarry on his farm at that place.

The Great Western Marble and Onyx Co., Spokane, Wash., is putting in a stone mill and also extending operations at its quarries.

The Eagle Stone Co., Ltd., Bloomington, Ind., has been incorporated with a capital stock of \$100,000.00, by Peter Bowman, J. A. May and F. M. Rogers.

The Metropolitan Granite Co., Portland, Me., has been incorporated with a capital stock of \$25,000.00, by Albert E. Knowlston, president, and G. B. Hinckley, treasurer.

The Kenton Marble and Granite Co., Kenton, Ohio, has been incorporated with a capital stock of \$25,000.00 by Carl Price, W. F. Born, Frank Price, G. J. Carter and Henry Price.

The Summit Park Stone Co. has been incorporated at Buffalo, N. Y., with a capital stock of \$15,000.00. The incorporators are: James Savage, Edmund P. Fish, and George Gilman.

S. H. Brown, formerly foreman of the New Brunswick Red Granite Co., Bangor, Me., has accepted a position as foreman of the granite works of C. E. Taynton & Co., Hallowell, Me.

It is said that the F. W. Menke Stone Co., Quincy, Ill., has been awarded the contract for stone work for the new courthouse at Centerville, Iowa. The building is to cost about \$75,000.00.

Alexander McDonald Granite Co. has been incorporated at New York City with a capital stock of \$25,000.00, with the following incorporators: Frank R. McDonald, William L. Orne and Alfred R. Baxter.

The Gloninger Limestone Co., Lebanon, Pa., has been incorporated with a capital stock of \$10,000.00, by A. B. Gloninger, H. E. Millard and Mary A. Gilroy, of Lebanon, and Eleanor B. Jordan, of Philadelphia, Pa.

Oliver Bros. have a quarry at Victor, Ind., of which John Torphy is superintendent, and they are preparing to erect a stone plant on a large scale to work up the stone from the quarry. We are not informed at this writing whether the plant will be located at Victor or Bloomington.

The Blair Stone and Sand Co., Altoona, Ill., has been incorporated with a capital stock of \$2,000.00.

D. Hayden, Huntington, Utah, and others, are developing a marble deposit near that place. Mr. Hyden is dressing and polishing marble at Huntington and steadily pushing it on the market.

Otto Hudson and Peter Adams, who own limestone quarries near Lehi, Utah, are said to be shipping fifty tons of limestone a day to Salt Lake smelters, and are preparing to increase the output to 200 tons.

C. P. Gill & Co., Montpelier, Vt., are building a new stone shed which they expect to have ready for the workmen April 1. The shed is 169x92 feet and is located near the shed of the Columbian Granite Co.

The Zeran Marble and Granite Works, Cairo, Ill., have elected officers as follows: J. S. Zeran, president and superintendent; J. W. Howe, vice president; John C. Gholson, treasurer; and W. G. Strohm, secretary.

Reports from Lewiston, Idaho, state that G. A. Nehrhood, J. A. Husby and W. L. Wilkerson will develop marble quarries on the Snake river in Idaho, just above those operated by A. Vinson, of Walla Walla, Wash.

The H. C. Bailey Marble Co., has been incorporated at Astoria, N. Y., with a capital stock of \$20,000.00. The incorporators are: C. O. Maas, R. E. Bergman, of New York City, and Earnest Chilton, of Brooklyn.

The Great Western Marble Works has been incorporated at Cincinnati, Ohio, with a capital stock of \$25,000.00. The incorporators are: G. A. Brooks, L. H. Brooks, W. Hildebrand, P. McDonough and C. L. Anderson.

The Sidney Stone Co. has been organized at Sidney, Neb., by James L. McIntosh, J. C. Hudson, R. D. Harris and A. J. Haskell. The new company has opened up quarries and it is said they have fair business prospects ahead.

Reports from Lanesville, Mass., state that the traveling crane at the plant of the Rockport Granite Co., which has been undergoing repairs, is completed and a number of the cutters who were suspended from work have resumed.

The stone mill building of the Beaver Dam Marble Co., Baltimore, Md., recently destroyed by fire, will be rebuilt by J. J. Walsh & Son, and is to be exactly the same as the former structure, 60x40 feet, and of frame construction.

The LaCrosse Stone Co., La Crosse, Wis., has filed articles of incorporation with a capital stock of \$10,000.00. They will quarry stone on "Granddad" bluff. The incorporators are: Wm. F. Funk, Elbert S. Meade and Albert C. Wolfe.

The Superior Brown Stone Co., has been incorporated with principal offices at 419 Market street, Camden, N. J., with a capital stock of \$300,000.00, to deal in stone. The incorporators are: Frank K. Moore, Reuben Kimball and Fred J. Carr.

The Florentine Marble Co., Spokane, Wash., has been incorporated with a capital stock of \$100,000.00, with the following directors: J. A. Finch, W. E. Finch, Chas. Hussey and S. B. Herron. The property of the company is located in Stevens county.

The Keltie Stone Co., Joliet, Ill., held its annual business meeting recently and elected the following officers: A. J. Green, Windsor, Ont., president; H. T. Keltie, Joliet, Ill., secretary-treasurer; James E. Newkirk, Joliet, Ill., superintendent.

Reports from Nashville, Tenn., state that a charter has been granted The Maxey Marble Co., of Knox county, with a capital stock of \$5,000.00. The incorporators are: Frank Maxey, Andrew Maxey, Samuel G. Rorex, George L. Maloney and William Maxey.

The Pulaski Crushed Rock and Paving Co. has been incorporated at Little Rock, Ark., with a capital stock of \$100,000.00. The incorporators are: Henry Dalhoff, president; W. B. Worthing, vice president; John A. Mitchell, secretary, and Gordon N. Peay, treasurer.

John Cullen & Co., Danby, Vt. are making extensive improvements at their works. About sixty men are now employed, but it is expected that they will have over a hundred men working in the spring. This firm has contracts to erect several large buildings in New York City.

The Pulaski Crushed Rock and Paving Co. will open up a stone quarry at Levi, Ark.

The E. B. Fernald Granite Co., Centre Lincolnville, Me., are starting in the season with more orders on hand than ever before at this time of the year, and expect to have a very busy season.

It is reported that the Pfeifer Cut Stone Co. of St. Joseph, Mo., has bought the limestone quarries near Batesville, and will install at that place one of the largest and most complete quarrying and stone dressing plants west of the Mississippi river.

The Billingsley Stone Co., Indianapolis, Ind., has been incorporated with a capital stock of \$25,000.00, with J. H. Billingsley as president. The company will cut, dress and mill stone. The other incorporators are: E. G. F. Brinkmeyer and J. H. Schmid.

The Jefferson Marble Co., which is developing some marble properties on Clugston creek, fourteen miles north of Collville, Wash., made the first shipment of marble East last month. It consisted of rough blocks of white and terra cotta coloring and went to Buffalo, N. Y.

The partnership business of Neukom & Colpitts, stone contractors of Toledo, Ohio, has been dissolved. Mr. Neukom will retain and operate the Ottawa Street stone yard, and for this purpose has taken his son in business with him. Mr. Colpitts will take over the yard at Elm and Champlain streets April 15.

The International Development Co., 382 Wilcox Annex, Los Angeles, Cal., is advertising some marble and other properties quite extensively in the newspapers throughout the country. One such ad. which has come to our hands is offering stock at 15 cents per share as a ground-floor proposition.

The Oxford (Mass.) Marble and Granite Co., which has a contract to build the Larned memorial library at that place, will cut the stone at the quarries of the Millford Pink Granite Co., Millford, Mass. Their first intention was to cut the stone at Rockford, but it was found best to do the work at Millford, so Superintendent Breggren has leased a shed at that place and will take workmen there to cut the stone.

The Vermont Marble Co. held its annual meeting at Proctor recently and elected the following directors: F. D. Proctor, F. C. Partridge, S. A. Howard, E. R. Morse, B. F. Taylor, W. E. Higbee, George H. Davis, George C. Robinson and Redfield Proctor, Jr. The following officers were also elected: F. D. Proctor, president; F. C. Partridge, vice president; E. R. Morse, treasurer; W. E. Higbee, secretary, and David H. Bixler, assistant secretary.

The Granite industry at Faith, N. C., has helped that town grow to the point where it is now about to be incorporated. The granite industry there was started some years ago by J. T. Wyatt, who began by shipping street curbing to Charlottesville, Va. The business of Mr. Wyatt has grown, too, and now he says he has orders coming in from every direction, and he is shipping curbing to all parts of the country, and incidentally helping out the town by bringing in considerable money.

Reports from Sturgeon Bay, Wis., state that the two quarrying firms of Termansen & Jensen and Graf & Nebel have consolidated their interests and incorporated under the name of the Sturgeon Bay Stone Co. The company will operate three quarries the coming season. The officers are: Louis P. Nebel, president; John Graef, vice president and treasurer; Soren Termansen, secretary; Lars H. Jensen, general manager. They are said to own the tug Sydney T. Smith, and one of the advantages of the consolidation is plenty of work to keep the tug busy.

## The Blue Stone Annual.

The Delaware Valley Blue Stone Association held its annual meeting at Hancock, N. Y., the past month and re-elected officers for the ensuing year as follows: Edward Kenny, of Long Eddy, president, and W. I. Randall, of Hancock, secretary. Those present at the meeting were Daniel Underwood and Patrick Madden, of Deposit; Messrs. Travis and Kingsbury, of Hale Eddy; J. W. Kirkpatrick and W. I. Randall, of Hancock; Edward Kenny and Cyrus Peak, of Long Eddy; Anthony Manny, of Hankins; C. W. Maxwell, of Pond Eddy; A. H. Woodward, C. R. Underwood, and S. L. Kirkpatrick, of New York City.



### The Rock Crushing Industry—Its Commercial and Mechanical Progress.

The readers of ROCK PRODUCTS have had the fact only impressed on their minds that the Portland cement industry has made wonderful progress in the United States during the past few years, and there has been a little incidental mention of the growth of the rock crushing and grinding industry. Now, if you will all investigate the subject carefully, you will become impressed with the idea that stone crushing and grinding is the branch of the stone industry that has been doing more growing than any other one line. The cement plants, themselves, you must remember, call for grinding and crushing as the biggest single item in mechanical operation, and aside from this, the stone crushing and grinding industry has been growing in all directions.

#### The Statistical Figures of 1901.

In the report of the United States Geological Survey for 1901, it was pointed out that one of the chief features of the stone industry during the year was the increase in the crushed stone product, including the stone crushed for wagon roads, that used for concrete and the crushed stone used in railroad ballasting. The amount of stone used in country road building has been increasing right along, and that notwithstanding the fact that gravel is now being used more extensively than ever before in road building, which shows that the good roads movement is bearing good fruit for the stone crushing industry. The value of crushed stone used in the United States during 1901 was tabulated in ROCK PRODUCTS for October, 1902. In this table it was shown that railroad ballasting called for crushed stone to the extent of \$2,306,196.00; road making, \$4,437,755.00; concrete, \$1,816,481.00, making a total of \$8,560,432.00. Of this total, \$5,271,642.00 is limestone; \$3,003,443.00 is granite, and \$285,342.00 is sandstone. If we analyze the figures further, and compare the limestone figures published in September, too, we find that so far as road making is concerned, granite and limestone are making nearly an even race with the odds in favor of the limestone. Ohio and Illinois are the big States in the limestone branch of the industry, with Pennsylvania, Indiana and Missouri coming along with quite large figures, too. In crushed granite for road making, it is a peculiar fact that the little State of New Jersey leads the production by several lengths, the figures on the big States standing as follows: New Jersey, \$677,176.00; Pennsylvania, \$294,686.00; New York, \$262,410.00; Connecticut, \$213,672.00.

#### The Past Year and the Present Outlook.

The foregoing is a digest of the story as it is told in the figures for 1901, figures which show a healthy increase for that year as compared to former years, and to this story the files of ROCK PRODUCTS will add enough from news items to show an increase for 1902 apparently in excess of any previous year. The statistics for 1902 are not yet available, but the activity reported in the stone crushing branch of the industry, together with the new plants reported as installed or to be installed have made a record in the current history of the industry this winter, and it looks like the coming summer will see even more of it. The good roads movement is still active, and gaining in force, railroads are preparing to do extensive ballasting, concrete is being more extensively used, there is lots more limestone being ground fine for various purposes, and, no matter which way we turn, we find the stone crushing and grinding industry growing. With its present magnitude and promised growth, a study of the manner of doing the work, the machines and appliances used, should interest almost every stone man in the country to-day, and that is the real purpose of this article—to discuss machines and appliances of the past and present, not so much to tell the reader things he does not know, as to bring out discussion of ways and means that all in the trade may learn something from an exchange of ideas.

#### The First Step in Stone Crushing.

The first step in crushing is to break it from the ledge and reduce it to such sizes that it may be handled with whatever mechanical appliances that are being used for its further reduction, and this comes under the head of blasting, which is another story, so we can confine the discussion in the present article to the crushing of the boulders that have been loosened from the ledge. Undoubtedly, the first rock breaking was done by

hand power, and this work attaches itself to penal institutions way back into the dark ages of history, and I might mention in passing, that it still clings to these institutions quite extensively where the work is done by hand. One of the oldest forms of breaking up stone and other hard material for mechanical means is the stamp mill. The stamp mill, as is well known, represents the simplest form of applying mechanical power in the work, it being in substance a hammer or weight driven by mechanical power instead of being operated by hand.

The original stamp mill consisted simply of a mass of chilled cast iron secured to a vertical shaft or beam, and this shaft carrying a bracket which is engaged by cams on a rotary shaft, which lifts it up to a certain height and then lets it drop. Modern applications of the stamp mill can be seen in the steam hammers of to-day used in forging iron. The stamp mill is also in use in various localities for reducing ore, but it does not seem to have any important application in the crushed stone industry of to-day. In ore crushing these stamps are used in batteries, that is, a number of them are attached to the same driving shaft and so arranged that the lifting of the stamps or hammers comes alternately, distributing the power required in driving so as to make it as near uniform at all moments as possible.

#### Two Fragments of History.

There is some obscurity surrounding the origin of the stamp mill, but its use is said to date from about the year 100 A. D. Following this, there were some other early inventions in the way of machines for crushing stone, including rolls, but out of the list all the inventors and others who have helped to make the stone crushing industry possible in its present magnitude, we find two men who loom up so prominently as to almost obscure the rest. These are Macadam and Blake; Macadam, because it was he who originated and developed the idea of building roads with crushed stone, and Blake, because he was the pioneer inventor of the well known jaw crusher, which has been used in one form and another all over the world for crushing stone. These two men deserve a place in the history of the stone crushing industry, and it is no disrespect to other inventors to say that they deserve a place side by side, and clear away from all others. To give them this proper place in this review of the industry, the following fragment of the biographical history of each is quoted from Appleton's Universal Cyclopedia:

#### John Loudon Macadam.

"Macadam, John Loudon, inventor of the system of road-making called macadamizing; born at Ayr, Scotland, September 21, 1756; went to New York in 1770 to reside with an uncle; during the Revolution was a loyalist; made a considerable fortune as agent for the sale of vessels brought into port as prizes, but lost most of it by his forced withdrawal at the peace of 1783; returned to Ayrshire, Scotland; became a magistrate and deputy lord-lieutenant of the county, and a trustee of roads. He was engaged much of the time during many years in traveling at his own expense through Great Britain to examine the condition of the roads, addressing in 1811 a memorial on the subject to the House of Commons, which led to the adoption of his system and to his own appointment as surveyor of roads in the Bristol district, where in 1816 he began to improve the highways. Within a few years he had personally supervised the road-making in twenty-eight counties in England.

#### The Inventor of Jaw Crushers.

"Eli Whitney Blake, LL. D., manufacturer and inventor; born in Westboro, Mass., January 27, 1795; graduated at Yale in 1816; became associated with his uncle, Eli Whitney, in the manufacture of arms on the plan of machine-made and interchangeable parts, which revolutionized the art of manufacturing complex constructions. Established a pioneer factory of domestic hardware near New Haven, Conn., 1834, and introduced many of those improvements in metallic house furnishings which have been given to American hardware its acknowledged superiority; invented (1857) the "Blake crusher," his most important invention, now in general use throughout the world. In this machine for reducing stone and ores to small fragments, he devised a new mechanical principle, that of crushing between upright convergent jaws, having a short and quick vibration. The machine may be said to have introduced a new era in road making and mining industries.

[To be Continued.]

## Fertilizers.

The Central Phosphate Co., Mt. Pleasant, Tenn., is busy on its export orders.

The Geo. W. Killebrew and John H. Carpenter have been buying some phosphate properties near Columbia, Tenn.

The Arkansas Phosphate Co., which is operating at Phosphate, Ark., is preparing to begin shipping their product to the East.

Capt. Joseph Hill, of Parire Pebble Phosphate Co., Bartow, Fla., is said to have purchased the property of the Land Pebble Phosphate Co.

The Phoenix Phosphate Co., of Florida, has been incorporated with a capital stock of \$50,000.00. The principal offices given as No. 10 Washington Place, East Orange, N. J. The incorporators are: James L. Frazee, Paul C. Brennan and Martin Dolphin.

E. L. Gregory, Mount Pleasant, Tenn., who has for the past four years been confining his work to the brokerage business in phosphate rock has bought a tract of land near Graytown, Hickman county, Tenn., and will now enter the field as a producer.

The Union Phosphate Co., of New York, has bought 220 acres of phosphate land from J. R. Williams, at Alachua, Fla. This is said to be one of the best pieces of phosphate properties in Florida, and is located about eleven miles west of Gainesville.

In a study of the Mt. Pleasant Phosphate district, written by J. W. Killebrew recently he states that the greatest benefit that the State of Tennessee has derived from the industry is in the number of fertilizer plants that have been established. "Before these beds of phosphates were worked there was only one large fertilizer factory in Nashville, located within three miles of the city. There are now seven, with a combined capacity of 20,000 tons of fertilizers annually. Three of these will make each 50,000 tons a year. A report published a week or two ago stated that there were now on hand in the various factories 89,000 tons of fertilizers awaiting shipment. The value of this quantity, approximately, is \$1,600,000, and this is less than half the capacity of the aggregate works.

"The Virginia-Carolina Co. has recently built a fertilizer factory in Memphis with a capacity of 20,000 tons per annum. There is also another in Chattanooga. Tennessee phosphate rock supplies the factories to a large extent at Atlanta, Macon, Columbus, and Rome in Georgia; one each in Birmingham, Montgomery, Mobile, Opelika, in Alabama; one each in Meridian and Jackson, Miss.; one in New Orleans, La. The rock is shipped to Cincinnati, Columbus and Cleveland, Ohio; to Buffalo, N. Y.; Detroit, Mich.; Chicago, Indianapolis, St. Louis, Philadelphia, and in small quantities to a large number of other cities. Between one-fourth and one-third of the entire output from the Mt. Pleasant mines is shipped to Europe, and is distributed most largely in France, England and Germany. The price of export rock varies from \$3.50 to \$4.50 per ton."

Shipments of phosphate rock from the Mt. Pleasant district by month, 1901 and 1902:

| MONTH.    | Domestic |         | Export  |         |
|-----------|----------|---------|---------|---------|
|           | 1901.    | 1901.   | 1902.   | 1902.   |
| January   | 19,693   | 20,530  | 24,834  | 10,010  |
| February  | 23,973   | 8,829   | 21,281  | 4,555   |
| March     | 25,683   | 8,292   | 21,498  | 11,708  |
| April     | 18,166   | 11,006  | 16,364  | 7,689   |
| May       | 18,387   | 11,982  | 21,695  | 1,616   |
| June      | 16,712   | 13,485  | 16,537  | 14,888  |
| July      | 17,020   | 10,909  | 23,707  | 8,160   |
| August    | 11,665   | 7,194   | 15,677  | 8,896   |
| September | 12,674   | 5,417   | 13,336  | 10,646  |
| October   | 17,506   | 11,771  | 23,190  | 15,922  |
| November  | 21,437   | 5,922   | 20,051  | 8,295   |
| December  | 19,494   | 9,268   | 23,378  | 3,145   |
| Total     | 222,410  | 124,605 | 241,548 | 105,530 |



## Quarries.

The White Marble Quarry Co., Gouverneur, N. Y., has been adding new channeling machines.

The Jones Granite Quarries, at Lithonia, Ga., has a contract to furnish granite for street work at Cincinnati, Ohio.

The Dunbar-Roe Mining Co., operating a quarry at Black Rock, Md., with L. W. Roe as president, will open a second quarry soon.

The City of Rockfield, Ill., has added a new boiler to its quarry equipment and is preparing for an active season in getting out stone.

It is reported that Reginald Poindexter, E. M. Tilley, A. H. Martin and others, of Norfolk, Va., contemplate forming a \$30,000.00 company to develop quarries.

The Ohio Quarries Co., Cleveland, Ohio, has been incorporated with a capital stock of \$5,000.00, by W. P. Whiting, P. E. Sanders, W. C. Boyle, R. F. Denison and C. C. Owens.

N. M. Lupton of Roscoe, N. Y., has purchased the quarry interests of L. C. Steinrod, at what is known as Crooks Falls, and is preparing to begin active quarry operations as soon as the weather will permit.

The Aberdeen Granite Co., Aberdeen, S. D., is building at the Baxter quarries, at Ortonville, S. D. They intend to equip a plant to cut granite. J. L. Koon and George R. Hall are to take charge of the work at that place.

The Indiana Limestone Co., 419 Market street, Camden, N. J., has been incorporated with a capital stock of \$50,000.00, to quarry stone. The incorporators are: Sidney C. Eastman, Carl V. Wisner and Harry A. Hickman.

The Desert Marble Co. is being organized at San Diego, Cal., by D. C. Collier, Jr., Sam F. Smith, James MacMullen, George W. Fitch and others. They claim to have located immense properties of marble, sulphur, gypsum, etc.

The Rock Island Railroad is said to be placing large orders for crushed stone with quarrymen throughout the State of Iowa. This road is preparing to do extensive ballasting this summer and this will call for large quantities of crushed stone.

Charles Force, of Washington, N. J., and Jacob Carter, of Belvidere, have, with Warren W. Wilbrick and Louis C. Fleming, of Danville, N. J., formed a company to quarry granite which has been discovered in large quantities in that locality.

Reports from Montreal, Canada, state that the Road Committee of that city contemplates purchasing a new and modern stone crusher and installing it in the quarries owned by the city in Outremont. It is said much crushed stone will be needed this season.

Reports from Owingsville, Ky., state that a fine quality of white marble has been discovered near the lithograph stone quarries in Rowan county. A 2,000-pound slab was quarried and sent to a Chicago firm and was pronounced equal to any marble found in the United States.

The Laramie Stone Co., Laramie, Wyo., has recently been organized with a capital stock of \$10,000.00, with John Crook, president; Emil Terkelson, vice president; A. R. Waldo, secretary, and George E. Phillips, treasurer. The quarries are located eight miles east of Laramie and the company will begin quarrying within thirty days.

Reports from Lewiston, Idaho, state that G. A. Nehrhood, A. Husebye and W. L. Kilkinson have bought 80 acres of marble quarries about three miles above Wild Goose Rapids, on Snake river, and have a large force of men opening up the quarries. The quarries are situated above those operated by Mr. A. Vinson, of Walla Walla. It is claimed that this marble is of very fine grade for monumental purposes. The above parties are said to be heavily interested in the Lewiston Southern Navigation Co., the Eureka Mining and Smelting Co. and the Fargo Mining Co.

The Northwestern Granite Co., Baker City, Oregon, has been incorporated with a capital stock of \$10,000.00. The incorporators are: William Pollman, P. Basche and N. C. Haskell.

The Allegheny Quarry Co., which was recently incorporated under the laws of New Jersey with a capital stock of \$125,000.00, has qualified to do business in the State of Ohio, and will have its main office at Lancaster, Ohio. The officers of the company are: S. C. Casparis, of Columbus, president; Edwin Embich, of Lancaster, secretary-treasurer.

The Tennessee Variegated Marble Co., Friendsville, Tenn., which was incorporated with a capital stock of \$600,000.00, and is now developing quarries contemplates extending operations by installing a modern quarrying and cutting plant. The officers are: C. M. Henley, president; W. B. Gamble, vice president, and J. R. Booth, secretary, all of Columbus, Ohio. Mr. J. R. Booth has offices at 315½ West Clinch avenue, Knoxville, Tenn.

The Keystone Marble Co., of Lebanon, Pa., whose quarries and plant are near Derry Church, Dauphin county, recently held a meeting and elected the following officers: John H. Black, president; Jacob B. Milliard, vice president, and George B. Ulrich, secretary-treasurer. This firm is said to be in a prosperous condition and they will put in new machinery to double their output of building stone.

### A Western Marble Quarry Property as Seen by a Western Editor.

The Daily newspaper men of the West Coast are now taking a lively interest in the stone resources of that great country. One of these, Mr. Conner Malott, city editor of a Spokane Washington daily, has the following description of the property of the Columbia River Marble Co., Spokane, Wash., in which he says there are tombstones for unborn millions:

A deposit of marble has been found in Stevens county that is nothing short of amazing in size and in the variety of ornamental stone which it contains. It lies along the bluff on the west shore of the Columbia river, two miles above Bossburg, and to measure it by metes and bounds would be almost impossible. A vast deposit of the rock extends for nearly two miles and has been exposed over a surface of more than 1,000 acres.

Throughout the whole property, marble outcrops at the very surface in broad, smooth floors or in mighty bluffs of a size that seems incredible. At Spion Kop, the highest point where it is exposed, there is a cliff of white marble nearly a quarter of a mile long that rises almost as sheer as the side of a house, for 200 feet.

The property was examined pretty thoroughly by Thomas H. Greenway, superintendent of the United States Marble Co., about a year ago, and he has spent more or less time on it since. A few weeks ago he and C. E. Mitchell organized a corporation to work the property. They called it the Columbia River Marble Co., and they have started development. The company has secured title to 1,230 acres of marble land. There is very little wash on the property, and the marble outcrops to the air in hundreds of places. It shows upon the hillsides in almost perfectly plane floors that are like the top of a table in smoothness and freedom from cracks. Then in the cliffs, such as those on Spion Kop, it breaks away in precipices that make one almost too dizzy to look down upon.

The marble is of many grades. At the southern portion of the property it is a hard, white crystal, not unlike loaf sugar in color and texture, though it takes a fine polish, it is peculiarly hard, and is perhaps best adapted for exterior building purposes. Towards the middle of the property it gives way to a mottled stone where the white rock is shot through with streaks and patches of a darker tone. There seems to be no limit to the amount of the white and mottled stone. Mr. Greenway confidently declares that with a few channeling machines at work, he can turn out marble at such low cost that it could compete with granite as a building material in Spokane. He declares that he can keep dimension stock in yards at Spokane so cheaply that a man wanting a stone step or a sill for a door, can get it of marble at the price he would have to pay for ordinary building rock. If a quarter of what Mr. Greenway confidently expects should come true, marble from the Columbia river quarries will soon be a staple in the building trade throughout the Northwest.

It is not all marble of such a character, however. At the north of the property, between Spion Kop and the river, there is a deposit of cream

colored stone which is too rare ever to be used for common work. Marble men say that it most resembles the Pavanazza marble of Italy. It is a faintly yellow stone, partly translucent, and its color tones are exquisite. It will always be used for the highest grade of interior finish. Mr. Greenway expects that it is the product which will give the widest fame to the quarries, and certainly it is a wonderfully beautiful stone.

When the property is opened so that transportation facilities will be required on a scale not afforded by the present wagon road and ferry to Bossburg, the company expects to put an aerial tram down the mountain and across the river to the opposite shore, where the Spokane Falls and Northern railway line connects with Spokane.

The outcrop is along the summit of the mountains 1,000 feet or more above the Columbia river. Nestled within the confines of the property are two delightful little lakes, one of which has long been known to the Indians for its curative qualities. It is surrounded on every side by marble outcrops, and it is probably the only place in the world where the noble Siwash has bathed himself in a marble bathtub.

### Prominent in Pink Granite.

The Balfour Quarry Co., of Asheville, N. C., has purchased and are now equipping with modern and up-to-date machinery, the pink and gray granite quarries of the North Carolina Pink Granite Co., near Salisbury, N. C. These very fine quarries were opened last summer and did an extensive business considering that work was not begun until June. This is said to be a fine close-grained stone and admirably adapted for all kinds of building work, vaults and statuary. An idea as to its quality may be obtained from the fact that the company shipped two stones to Barnicoat, the famous sculptor, of Quincy, Mass., for statuary. One of the stones weighed twenty tons and is intended to make one figure only. They furnished a large vault for Pittsburg, Pa., and all the granite for an engine house in Philadelphia, the lower portion of the engine house being polished. They have furnished all the granite work on the following large structures in Washington, D. C.: The Home Savings Bank, eight stories; the Highland Apartment House, 8 stories, 100 feet square; the Stoneleigh Court, the largest apartment house in Washington, and the Glenora Apartment House, and numerous other smaller jobs. The Balfour Quarry Co. now own and operate seven granite quarries on the lines of the Southern railroad at Balfour, Concord, Faith, Granite Quarry, Montford, Mortor and Old Fort, all in North Carolina. They do all kinds of building, street and bridge work and have a daily capacity of 1,000 tons of crushed stone for all purposes.

### Will Erect Two Derrecks.

James Nevins' Sons, Fishs Eddy, N. Y.—Replying to your inquiry, would say our business in 1902 was about 25 per cent. larger than the previous year. The only improvements we contemplate is erection of two derricks. Our mill at present consists of three gang saws, two diamond saws, two planers, one header, two rubbing beds and three cranes. The quarries in our neighborhood are worked by individuals from whom we purchase output. We prepare all our output for building purposes.

### The Great Nile Dam.

The English Government has done some work on the Nile that is an interesting undertaking from a rock product standpoint, not only on account of the material used, but because of the magnitude of the work. At a place called Aswan, about 850 miles above Cairo, Egypt, a dam has been built across the Nile to make a reservoir that will contain 1,000 million tons of water. Then, there are various supplementary works in the way of distributing canals, locks, etc., for handling the water for irrigation purposes, and also for navigation between Aswan and Asyut, which is about 600 miles below the point of the dam and reservoir. From the information at hand, it appears that this dam is one and a quarter miles in length and the height from the foundation is about 140 feet. The difference of the water level above and below is 67 feet, and the total weight of masonry is over 1,000,000 tons. What this dam and reservoir means to Egypt is surety of crops and protection against drouth, because the water will be stored here and irrigation resorted to, and it shows to the world what can be done with the aid of rock products toward insuring fertility in other countries subject to drouth.



# Monuments.

Monterastelli Bros., Pendleton, Ore., will build new marble works this spring.

Miller & Dye, Danville, Ill., have been erecting some fine monumental work lately.

A. J. McCarthy and C. Huntington are opening up a new marble shop at Marion, Ohio.

Otto Koke, Mankato, Minn., will open up a marble cutting establishment at Duluth, Minn.

George Panke, Vicksburg, Miss., is moving his marble yard to a new location in that town.

Henry P. Miller, Readfield, Me., manufacturer of monuments, has filed a petition in bankruptcy.

S. O. Sanders, of Centralia, Ill., has a contract to erect a soldiers' monument at Greenville, Ohio.

C. C. Mull, Pana, Ill., is said to have been doing a good business in the monument line recently.

N. H. Williams and R. M. Merchant are preparing to open up a monument business at West Sullivan, Me.

D. L. Critten has bought the interest of E. H. Tillary in the marble concern of Brown, Tillary & Co., Gallatin, Mo.

The Standard Monument Works, Vincennes, Ind., has been getting in a stock of granite monuments from Quincy, Mass.

W. T. Shaffer & Son, Somerset, Pa., installed air compressor and pneumatic tools in the monument shop the first of the year.

The Crouch Marble and Granite Co., Atlanta, Ga., reports a pleasing amount of Southern monument trade coming their way.

M. R. Johnson, Belleport, Ohio, recently erected a fine monument in the cemetery at that place of Barre granite, weighing twelve tons.

J. B. Sullivan & Son, Taunton, Mass., have a contract for erecting the Robert Treat Paine memorial at that place to cost \$13,000.00.

The Co-operative Granite Co. will open a monument shop at Mendota, Ill., and makes a specialty of red Missouri granite for the trade.

Henn & Huschart, Lawrenceburg, Ind., have added a traveling crane to their monument works and otherwise improved their equipment.

Louis Oehlmann, Oconto, Wis., has been getting in a good stock of monuments lately and is making preparations for the spring trade.

John T. Crotty, Keokuk, Iowa, has among monument contracts, one for erecting a nine-ton monument in the Durham, Iowa, cemetery.

J. E. Jamison, of Potomac, Ill., has purchased an interest in the marble business of F. D. Knox, at Danville, Ill., and will move to that place.

The monument business of P. L. Turner, New Castle, Pa., has been sold to F. G. Beer, who will make some improvements in his establishment.

The Empire Monument Co., Norwich, N. Y., has among other monumental work on hand, a contract to erect a mausoleum to cost \$18,000.00.

The monumental firm of White & Price, Kenton, Ohio, has dissolved partnership, Mr. Dorr White retiring from business on account of ill health.

Architects Garrere and Hastings, Buffalo, N. Y., have been selected to design the McKinley Monument for which the State has appropriated \$150,000.00.

The Tullis Granite Works, Alliance, Ohio, starts in the new year with an encouraging outlook ahead and quite a number of orders for monumental work already on hand.

The Richmond Granite Co., Richmond, Va., has among its monument contracts one for erecting a pedestal on the grounds of the Virginia Military Academy, to cost \$3,000.00.

Otto Schumann, Portland, Ore., was the successful bidder for a contract for erecting a soldiers' monument at the Lone Fir cemetery. The monument will be made of California granite.

J. W. Westland, Center City, Minn., is enjoying his full share of prosperity in the monument business and seems to have orders ahead to keep him busy through the spring season already.

It is reported that the local monument dealers in the State of Montana are taking steps toward forming an association. J. E. Tuite, of Butte, Mont., is interested in the movement.

A. Sterling Miller has bought the Marinette (Wis.) Marble and Granite Works from R. J. Hinze. The works are located at the corner of Pierce and Newberry avenues, Marinette, Wis.

The Hughes Granite Co., Clyde, Ohio, has secured contract for the erection of a number of monuments on the Antietam battle field. The contracts amount to something over \$20,000.00.

Crisswell & Fulmer, marble dealers of Lisbon, Ohio, have moved into new quarters recently and will do a wholesale as well as a retail business, and expects to considerably enlarge their operations.

Julian Earle has sold his monument business at Watertown, N. Y., to Felton & Dickinson of that place, who were also in the monument business. The business of the two concerns will be combined.

Charles M. Walsh, Petersburg, Va., has secured a contract to erect a monument to the Confederate dead at Marion, Va., to cost \$1,100.00. It will be built of Dinwiddie granite from Mr. Walsh's quarry near Petersburg.

A commission created by an act of Congress in 1901 for the selection of a model for a memorial to U. S. Grant to cost \$200,000.00, recently met and decided in favor of the model submitted by Henry Merwin Shady, of New York.

The Iowa and Nebraska Granite & Marble Co. has been incorporated at Omaha, Neb., with a capital stock of \$10,000.00. The incorporators are: Jos. E. Blenkiron, J. G. Cannon, J. C. Copple, Zach Tranmer and C. H. Chapman.

The Root Marble Works, Washington, Kan., have been purchased by James Groody. Mr. Groody is said to have had years of experience as a marble cutter, and has for the past year had charge of the business management of the concern.

The Westerly Granite Co., Chillicothe, Ohio, has among its monumental orders on hand one for a Sarcophagus to cost \$8,000.00. They are said to have quite a number of large monuments under construction for spring delivery in addition to this.

The Washington Granite Monumental Co., Washington, D. C., has among other monumental work, a monument to erect for the Grand Lodge I. O. O. F. to Rev. Parker Hall Sweet, who for nearly twenty years was the secretary of the Grand Lodge.

The Muldoon Monument Works, Louisville, Ky., one of our well known monumental institutions, has been made into an incorporated concern with a capital stock of \$50,000.00. The incorporators are: Mike Muldoon, George Norton and Byron Hilliard.

Louis Zinger, Pekin, Ill., has been figuring with the Davidson Granite Works, of Toulon, Ill., with a view to having that concern move to Pekin, offering to take an interest in the works himself. At this writing we are not advised whether or not the deal has been consummated.

W. R. Milne, of the firm of Milne & Benton, monumental workers, of Watervliet, N. Y., was accidentally killed while assisting in the loading of a five-ton die on a sleigh. Full details of the accident are not at hand, but it is stated that his head was caught under the die and was crushed, killing him instantly. Mr. Milne was 55 years old and is survived by a family.

The Central Illinois Monumental Co. has been organized at Litchfield, Ill., with a capital stock of \$2,500.00. The officers are: M. M. Milnor, president; F. M. Young, vice president; John H. Taylor, secretary; A. R. Stansifer, treasurer, and A. R. Finnell, superintendent. It is the intention of the new concern to do the greater part of the finishing in monumental work at their own plant.

The Melcher Marble and Granite Co., Mount Pleasant, Iowa, recently had shipped to them what is said to be the largest monument ever received in that city, the weight being over 17,000 pounds.

Daniel Canning has a modern monumental establishment at Newberryport, Mass. Among his latest additions in the way of equipment is a polisher for working stone 16 feet long by 4 feet wide. He has pneumatic tools and other modern appliances and his plant is driven by a gasoline engine. It is said he will enlarge his plant in the spring by building an addition and installing more machinery.

In ROCK PRODUCTS for February there was an account of a marble slab bending of its own weight, and now there is a story that comes from Illinois about a headstone in a graveyard which gradually curved over backwards until the top hung more than a foot perpendicular, finally falling and breaking to pieces. In this latter instance, the slab was of Rutland marble 5 feet 6 in. high, 2 ft. wide and 2 in. thick.

## BUSINESS TIPS.

A movement is on foot to erect a soldiers' monument at Belleville, Ill., to cost \$5,000.00.

The school children of Carbondale, Ill., are taking steps to erect a monument to General John A. Logan.

The Athens, Ga., Daughters of the American Revolution propose to erect a monument to Gen. Elijah Clarke.

Plymouth Church, Brooklyn, N. Y., is raising a fund of \$150,000.00 to erect a monument to Henry Ward Beecher.

Funds are being raised at Tiffin, Ohio, by the General Wm. H. Gibson Post, G. A. R., to erect a monument to General Gibson.

An association, of which John Russell Marble is secretary, has been formed at Worcester, Mass., to erect a suitable monument to the State heroes of the Revolution.

A movement was started at the annual banquet of the Caledonian Club, Washington, D. C., looking to the erection of a monument in that city to Robert Burns.

The Ladies Auxiliary of the Hupp-Deyerle Camp of Confederate Veterans, Salem, Va., has started a movement to raise funds for the erection of a monument of the Roanoke County Confederate dead.

The Daughters of the Empire, St. Johns, N. B., are at the head of a movement for sending Canadian monuments to South Africa to mark the graves of the Canadian soldiers who perished in the African war.

A monument is to be erected to General Hugh Mercer at Fredericksburg, Va., costing \$25,000.00. Mr. Edward V. Valentine, of Richmond, Va., has been invited to submit designs for a bronze statue together with plans for a granite pedestal.

Cooper Bros., Raleigh, N. C., say their plant is turning out more monumental work than any time before. During the past year they sold more large monuments than ever before, and the prospects ahead now look like this year will be even better.

The International Typographical Union has taken steps to erect a \$12,000.00 monument at Colorado Springs, Colo., to the memory of Amos J. Cummings, who bequeathed a library to the printers' home at that place. It will be erected on the home grounds.

The House of Representatives of South Carolina has passed a bill appropriating \$20,000.00 toward the erection of an equestrian monument to Wade Hampton, to be erected on the State capital grounds at Columbia, S. C. \$10,000.00 more must be raised by subscription.

There is a movement on foot at St. Louis, Mo., to erect a monument to Father Theobald Mathews, the great temperance advocate, in Forest Park, by the order of Father Mathews. John T. Kelly, of the Western Watchman, is one of those interested in the movement.

The Prison Ship Martyrs' Monument Association, of New York City, have received pledges of assistance from Congress, the legislature and the city of New York, for \$188,000.00 toward the erection of a monument, and are attempting to raise \$11,000.00 more by subscription.

## Sand-Brick.

### The Manufacture of Artificial Sandstone.

(Condensed from a paper read at the Cleveland meeting of the American Ceramic Society, February, 1902, by Samuel V. Peppel, B. Sc.)

During the last five or ten years, occasional newspaper articles written in popular vein have appeared, describing a wonderful industry which was to revolutionize the brick business in this country, intimating that brick to answer all purposes was to be made from sand at a cost far below that of ordinary clay brick. Time has not verified these statements, in this country at any rate. Nevertheless, the sand brick industry has a promising future in this country, for the production of ornamental architectural effects, if for no other purpose.

#### What is Meant by "Sand Brick."

Sand brick, or the "kalksandstein" of the Germans, is a mass of sand particles bound together by either calcium carbonate or calcium hydrosilicate, or a mixture of both. Sand brick, with calcium carbonate as the cementing material, or "filler" of the spaces between the particles of sand, has been manufactured for fifty years or more. Sand brick with calcium silicate as the cementing, bonding and filling material, does not date back more than ten or twenty years. In the latter case, there is a chemical combination or reaction between the two constituents forming the brick, which binds the two together in a manner akin to vitrification. The resultant product is similar in many respects to dry press brick, in that vitrification does not penetrate to the core of each particle. In the former this is not the case.

#### Three Kinds of Artificial Stone.

For either product the necessary raw material are the same—sand, or a granular silicate, and lime (either a high calcium or a dolomite lime). The method of treatment during the process of manufacture differentiates them into three distinct products, all of which go indiscriminately under the same name.

The three distinct products are sand brick, with an exclusively carbonate filler; sand brick with partly carbonate filler and partly silicate filler; and sand brick with hydrosilicate filler. Stone which has a carbonate of calcium as the filling or binding material does not have the strength of one in which there is a chemical union of sand and calcium or magnesium, combined as the case may be. It will fill certain requirements in building construction, however, and can be manufactured at much less cost.

#### Different Methods of Manufacture.

In manufacturing by the carbonate process 20 to 40 per cent. of completely slaked lime is thoroughly mixed with sand, and enough water to make molding possible at moderate pressure.

Blocks made in this manner are hardened in three different ways. One is by exposure of the blocks to the atmosphere for a long time, the caustic lime thus slowly absorbing the needed carbon dioxide. The time required in this process is usually from five to six months. As this process is similar to making and hardening mortar, the best lime would naturally be a hydraulic lime.

Another way, which gives the same result in less time, is by hardening in an atmosphere, rich in carbon dioxide, without pressure.

The third way of hardening is with carbon dioxide under pressure.

In making sand brick with a partly carbonate and a partly silicate filler, the process is essentially the same, except in hardening, the hardening in this latter instance being done by moist atmosphere, saturated with CO<sub>2</sub> from the lime kilns, and the heat of slaking lime is used to aid in keeping the temperature up to 60-70 degrees C. A combination of the methods for the class 2 and 3 provides for the introduction of CO<sub>2</sub> into the kettles or closed iron cylinders used for hardening in class 3.

#### Pure Sand Necessary.

The third and more important class of artificial sandstone products classed as sand brick with a hydrosilicate filler, calls for the same class of raw

materials as those just considered, that is, lime and sand. Almost any kind of sand can be used and a fair product produced, provided the treatment is properly varied to suit the physical and chemical properties of the sand, but this work is, of course, limited by the cost of manufacturing. In other words a comparatively pure sand is essential to cheap manufacture, and it should not only be pure, but fine. For the best results most of the sand should pass through a screen of 20 meshes to an inch, unless there is a good gradation from the extremely fine sand to the coarsest sizes, which will permit, of course, the sand being worked to advantage. In any event, sand should contain sufficient fine particles to combine with the lime, thus reducing the amount of lime necessary for welding the particles together. As a general rule, the finer the material as a whole, the more difficult it is to thoroughly mix, but the union of the lime and sand will be more complete.

Professor Michaelis has given the physical properties of the sand primary importance, and the chemical properties a secondary place. He also says that two-thirds coarse and one-third fine sand gives a denser and finer brick than where the sand is all one size. Seventy per cent. coarse sand, 30 per cent. fine sand, with 5 per cent. added lime, gives a good product, having 7 to 8 per cent. porosity. He has also shown that good brick can be made with sand carrying as much as 40 per cent. clay, if sufficient lime is used.

For each part of clay in sand, it calls for almost an equal part of lime in excess of what will be needed for the sand itself. However, as any inert matter tends to weaken the brick, it is best to use sand that is comparatively pure. Of course, sharp sand is preferable. If sand available for this work contains any great quantity of clay, it will probably be economical to roughly wash it, which would increase the cost of production from 5 to 7 cents on each thousand bricks produced.

#### Says Fat Limes Are the Best.

In lime for this work, one of the main requirements is proper burning. Since dead burning of limestone or dolomite tends to produce a crystalline oxide, which slakes or hydrates with extreme slowness, a portion might remain unslaked or uncombined, and make trouble by future slaking, and possible change of volume and possibly efflorescence. It would hardly rupture the brick, since the crystalline oxide is said to hydrate without much change of volume.

Economy, however, indicates the use of purer limes (lime, dolomitic lime or dolomite lime). The impurity is usually clay or sand, and at the temperature at which limes are burned SiO<sub>2</sub> will be combined with the lime, and the Al<sub>2</sub>O<sub>3</sub> remain as such, both acting as inert bodies so far as sand brick are concerned.

German practice up to the present time seems to be to use only fat limes. Ernst Stoffer, an engineer of Zurich, Switzerland, who has published a pamphlet on this industry, says fat limes are the best.

#### Different Methods of Slaking Lime.

In the process of manufacturing sandstone brick to-day one of four methods is used: the wet slaking process, the dry slaking process, the acid slaking process or the quicklime or oxide process.

The first methods consists in slaking the lime to a fat putty, and then adding the desired amount of sand and water, either in a wet pan or pug mill, after which it is put in a bin and allowed to stand and ripen the usual time before being molded and pressed.

The second method differs from this one in that the lime is slaked with just enough water, so that the chemical action will dry the finished hydrate. For this work there are a number of patented machines, some of which are closed, and the slaking is done under pressure with water alone, while others use both water and steam.

In the third method from 5 to 10 per cent. of commercial hydrochloric acid—19° B.—is added to the lime after slaking has begun. This process is the subject of a German patent.

In the fourth method, which is considered the most rational, the quicklime is mixed with the sand and just enough water to make it possible to work up in the press. Water is added in two portions with a short interval of time between, and the product then goes to the press.

#### How the Stone is Hardened.

The hardening of artificial stone of this kind is accomplished in one of two ways, either by low pressure steam and long exposure, or high pressure steam and short exposure. In the first case, the pressure used is about two atmospheres, giving a temperature of 120 to 125 degrees C and the

duration of the exposure is about seventy-two hours; in the second case, the steam pressure is from eight to ten atmospheres, giving temperatures from 175° to 185° C., and the exposure lasts for a few hours only, six to ten hours being sufficient in most cases.

The letters patent on this latter and most important procedure were taken out by Professor Michaelis early in the eighties, and permitted by him to lapse without commercial application.

The machinery necessary, in a general way, for equipping a plant to manufacture sandstone brick, it will be readily seen, consists of apparatus for wet or dry slaking, conveying machinery, mixing machines, presses, trucks, hardening boilers and machinery for generating power. The only machine in this list peculiar to these special requirements seems to be the hardening boiler, which is simply an iron cylinder or boiler without flues, made to stand considerable pressure and having usually but one head removable and bolted on. This head is handled by a crane, and unbolted and moved away after filling the boiler with raw brick. The customary size of such a boiler is from 6 to 7 feet in diameter by 30 to 60 feet in length.

#### The Cost of a Plant.

Various estimates are given of the cost of erecting a plant, a liberal one being \$50,000.00 for a plant to manufacture 40,000 bricks a day. With such a plant, it is figured that a sandstone brick, under proper conditions as to the supply of raw material, lime, etc., could be produced at a cost of \$4.00 a 1,000. In other words, it is given as a safe estimate that this product can be put on the market as cheap as pressed brick and leave a good profit.

In the discussion of this paper, Mr. H. E. Brown, of Coldwater, Mich., who is also interested in this sandstone brick business, and has secured patents in connection with experiments carried out in the laboratory of the Michigan Portland Cement Co., says that he thinks \$50,000.00 will not only build a modern plant of 40,000 capacity, but will leave a good working capital besides.

The Baltimore (Md.) Ferro Concrete Co. has been incorporated under the laws of Delaware with a capital stock of \$1,000,000.00.

H. L. Brintall, of Saginaw, Mich., has been looking over the ground around Houston, Tex., with a view to establishing a plant for manufacturing lime and cement brick.

The Asbestine Stone Co., Austin, Minn., of which Engle Bros. are proprietors, has been figuring with Fort Dodge, Iowa, parties, with a view to erecting a plant at Fort Dodge, to make cement tiling, hitching posts, sidewalks, ornamental stone, etc.

Reports from Sioux Falls, S. D., state that the firm of Miracle & Miracle, who have been in business at Sioux Falls for a number of years, contemplate establishing a cement block factory at Watertown.

The Iowa Cement Brick Co., Sioux City, Iowa, of which Wilbur C. McNeil is president, has purchased land at North Riverside, and contemplates erecting a manufacturing plant there in the spring.

The American Vitrified Stone and Concrete Co., Waverly, N. Y., has been incorporated with a capital stock of \$100,000.00. The directors are: E. E. Stanton and C. H. Field, Atlantic City; C. H. Stere, Norwich.

The Miller-Marable Twentieth Century Manufacturing Co., Raleigh, N. C., has been incorporated with a capital stock of \$100,000.00, to manufacture artificial stone and concrete blocks. The incorporators are: C. H. Miller, D. T. Marable, W. R. Whiton, E. W. Keith and C. H. Miller.

The California Granite Building Block Co. has been incorporated at Los Angeles, Cal., with a capital stock of \$100,000.00, to make concrete building blocks by the Palmer Process. The incorporators are: Edwin A. Meserve, J. P. Chandler, George B. Beebe and H. L. Hopkins, Los Angeles, and W. E. Brock, Riverside, Cal.

The Parry Artificial Stone Co., Mansfield, Ohio, which manufactures cement building blocks, seems to be doing a flourishing business. A local paper up there gave an extensive description of the works in a recent issue, in which it was stated that this concern was building a number of cement tanks of the Shelby Nickel Plating Co. Another product of the company is burial vaults. They also make a sewer pipe, in addition to making building material.



# CLAY-WORKERS MEET.

[Continued from first Page.]

paper was written in rhyme, after which Mr. Frey entered into a detailed discussion of "Brick Making—Then and Now," showing in detail the cost in manufacturing brick at different times and by different methods.

This paper was followed by "Modern Brick Streets," by W. M. S. Crandall, editor of the *Municipal Journal and Engineer*, of New York City.

Mr. Crandall illustrated his talk with stereopticon views.

The next number on the program was a report of the Committee on Clay Products, at the St. Louis World's Fair, by Professor H. A. Wheeler, of St. Louis, Mo.

## PREPARING FOR THE WORLD'S FAIR.

(Report of the committee on exhibit of clay products at the St. Louis World's Fair, presented to the meeting—National Brick Manufacturers' Association at the Boston meeting, February 2-7 1903, by Prof. H. A. Wheeler.)

Mr. President and Fellow-Members—The committee appointed to see that the clay industries are properly represented at the Louisiana Purchase Exposition, to be held at St. Louis in 1904, held its first meeting last fall in St. Louis, which was very well attended. One reason the meeting was deferred was primarily in the selection of the committee. When I was first asked to be one of several to make up this committee I at first demurred, because I had gone out of the actual manufacturing business, but on further consideration it was decided that this of itself was a very good reason why I should serve. The second reason was because I had a high ambition that I might interest some of the institutions with which I am connected in St. Louis, and so enable us to carry out this plan of an exhibition on such a scale as never before attempted, I had hopes of being able to get the financial backing to build a building entirely of clay products, excepting the iron and steel skeleton. If carried out, such a building would become a permanent monument to the clay industries, and one carried out on broad lines by a good architect would have been a monument we would all have been proud of.

Unfortunately, the ground on which the exposition is to be held is a public park, which the commission is under heavy bond to restore to perfect order. This would make it necessary to either purchase land outright or lease it to get the site sufficient for this building. We tried to get assistance from one or two local societies, including the St. Louis Academy of Sciences, which needs just such a building, but unfortunately, it did not have funds enough to carry it out. We then tried to interest the Washington University of St. Louis, which did not succeed in this. They had a Philadelphia architect, and the mechanical perfection of St. Louis brick was too much for him. He had been raised in Philadelphia and would not use St. Louis brick—they were too perfect. They did not have that varied effect in color and shape which he thought necessary for a fine architectural effect. It resulted in granite being selected. The architect is supreme, as many of us have found out, and if we agreed to put up a stone building no clay man would care to use his material. It would be so sub-ordinate to stone; so we had to give that up.

Some of you are no doubt aware of how hard it is to get favors from the St. Louis Council. They are sometimes luxuries. Some people who have done this are now taking a good vacation. The committee finally had to fall back on the plan so vigorously opposed at the outset. Our Secretary, Mr. Randall, took the matter up, with his customary energy, with the World's Fair people, and he was very fortunate in that he struck the right man, an official, who not only was in charge of one of the important buildings of the World's Fair, but who also had been in the past, and still is, connected with one of the government departments at Washington. After the committee was completed we met last fall and discussed how the proposition could be handled, and we all agreed that to bring something to a focus, and something tangible to discuss, the best thing would be to get a design, drawn from the best standpoint of an architect. It was also agreed that the most available architects whose national reputation and integrity were without question were the St. Louis representatives of etoainetainu, architects of the highest reputation. They were asked to consider this proposition, and, if they were willing, to block out a scheme for an exhibit of clay products. They immediately wanted to know how much space was available and finally Dr. Holmes agreed that they would give us 20,000 square feet

in the Mines and Mining building. We were very modest. We asked for only 40,000, saying we would compromise on 30,000 if necessary. He told us he would give us 20,000 and would guarantee that we would not be cut down, a guarantee that was not given to anyone else.

I am glad to say that the aggressiveness of Mr. Randall has created a favorable impression and an interest on the part of the World's Fair Commission, and they are going farther than we had expected. It was realized that a committee of brickmakers would be seriously handicapped when they asked the enameled-brickmakers, the encaustic tilemakers, the terra cotta men, and the pottery and roofing-tile manufacturers and the manufacturers of all sorts of ceramic products to co-operate with them, and if this could be handled in an official capacity by one of the World's Fair departments it would probably meet better spirit and be received more kindly by some of the manufacturers of some of the higher grades of clay products. This finally resulted in the Mining Department appointing a special attaché to see that the clay industries are properly represented and the exhibit properly installed, and if it can be carried out on broad, generous lines it will subsequently be installed permanently at Washington. This last feature is one that, up to very recently, had been kept very quiet.

First and foremost, we are working for a St. Louis World's Fair. In the second place, the exhibit being a success in St. Louis, the Washington proposition is safe and secure, although we would rather for a while keep that subordinate. But I think we can recognize that, as a business proposition, it is worthy our very best efforts. After the St. Louis Fair it will be installed in one of the government technical museums. I think you will all recognize the fact that there is no site as desirable for a permanent exhibit of this sort as Washington.

The St. Louis Fair grounds are in the West and central part of the city, five miles West of the Mississippi River, near the most attractive residence portion of the city, very fortunately located in reference to street-car and railroad facilities. It occupies a site of 12,000 acres. The main group of buildings will be in the Eastern half and the prominent buildings will be grouped around an eminence that rises about one hundred feet above the country. The Mines and Mining building, as you will see by referring to this map, is between the main railroad entrance to the Fair and the main street entrance. It is situated next to what will be the most attractive building on the grounds, and the main aisle through the Mining building will probably be the best-traveled thoroughfare on the grounds.

Secretary Randall's early efforts have resulted in our getting undoubtedly the best site on the ground, and I feel that our Association ought to be congratulated on getting that magnificent site. Here is a photograph of the main facade of the main building: The main building covers nine acres, and we have in half an acre. Here is a ground plan of that 20,000 square feet. The architects have blocked it out in a series of squares, surrounding and intersecting it by large aisles. The walls are to be of brick, with a terra-cotta coping calling attention to it and giving the opportunity of showing clay products for walls. The central figure is to be a kiln—not any one particular kiln, but an architect's kiln. Next to it in importance will be a monolith in terra cotta, an opportunity to force clay products into a department which has heretofore been monopolized by stone. This monolith feature will be treated on as large lines as possible. There will be a series of alcoves, to be treated in as attractive way as possible with clay products, and you will see terra cotta and encaustic tile used to the best advantage.

Wherever we can bring out the ceramic products these alcoves will be made extremely attractive, so much so that I think you will find it wise to continue them so as to show the size, variety and color in clay products, so that any one passing through this building will come out thoroughly impressed with the importance of the clay industry. Here in the plan is an elevation showing these alcoves with a tile roof, some faced with encaustic tile and some with terra cotta, some with ornamental brick, some with pressed and enameled brick. The various uses of brick and terra cotta are better shown in this next view. All the aisles will be paved with different varieties of paving brick; the floors will probably be treated with flooring tile. The whole idea is to show in actual use, so far as it is possible, all the different varieties of the different clay products.

The proposition as it stands to-day is this: These plans are all preliminary, and we want all the criticism we can get, and we want the manufacturers who intend to exhibit to let us know now how much space they will want, so we may know what we may expect, and we want them to give the financial support necessary to properly install and care for the exhibit during the World's Fair. While the space, light and power is gratis, the mere shipping of the goods there is only a beginning. We have

thought it best to have Dr. Holmes, the director, to receive these funds and disperse them upon vouchers after they have been "O.K.ed" by the architect, the whole thing to be under the supervision of the architect. We want the leading manufacturers of clay products of all kinds, all over the country, to send in their exhibits. First their raw products and an analysis of the same, if they have it. Second, the product in the green state; and last, the finished product, and to accompany them, so far as possible, with good photographs, if they have them, so that anyone going through this building will see the best of the clay industry, from the raw to the finished product, ready for the market. (Applause.)

At the close of this report, Secretary Randall read a resolution to the effect that an appropriation of \$200.00 be made out of the funds of the association to cover the expenses incurred in the preparation of plans by Messrs. Mauran, Russel and Garden, St. Louis, Mo., for an exhibit of clay products at the fair, to which was also added a clause appropriating \$100.00 to reimburse Prof. Wheeler in part for expenses he had incurred in connection with his duties as chairman of the committee on the World's Fair exhibit. On motion, these resolutions were promptly adopted. Then, after some discussion between Prof. Wheeler and D. V. Purington on matters in connection with the proposed exhibit, the convention adjourned until Friday morning.

## FRIDAY MORNING, FEBRUARY 6.

At the opening of the session Friday morning Second Vice President W. S. Purington, who had not made his appearance up to this time, was brought forward and made to say his little speech, after which the meeting proceeded with the regular order of business. The first thing in order being "Salt Glazing Brick," by Isaac Hardy, Work-sop, England.

This was followed by a paper by Mr. W. G. Titcomb, of Providence, R. I., on "How Not to sell Brick."

Following this paper there was considerable general discussion on questions that had been raised the previous day, after which there was a paper by O. K. Edwards, Newberg, Ore., on "The Essentials to Success in the Manufacture of Dry-Pressed Brick."

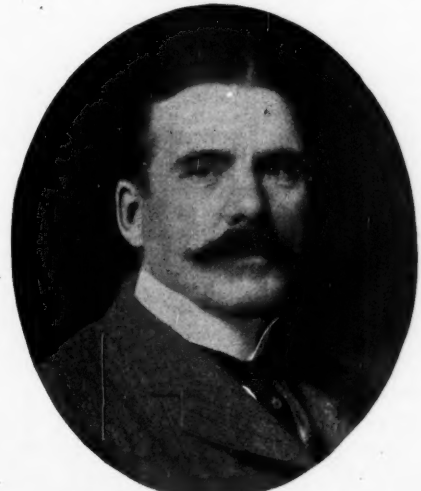
This was one of the most interesting papers of the day, and we expect to print it in full at an early date, because it contains a lot of good information for the clayworker. It was followed by another interesting paper, too, "Drying Brick," by B. P. Hollett, of Arcadia, Ind.

Another paper along the same line, by Mr. L. C. Moore, of Memphis, Mo., covering the subject of "Natural Air Dryers vs. Artificial Dryers," was next on the program. Mr. Moore was not able to be present, and his paper was read by Mr. DeLong, of Glen Falls, N. Y.

This paper was the subject of some discussion, led by D. V. Purington, who made the point that no man should build a dryer of any kind, for any purpose, without it being fireproof. When the discussion came to an end, the president announced the Committee on Resolutions, composed of Prof. H. A. Wheeler, St. Louis, chairman; L. H. Haggerty, Detroit, Mich.; J. A. Francis, Shamokin, Pa.; F. Salmen, Slidell, La.; O. T. Dennison, Mason City, Iowa.; J. Frank Plumb, Syracuse, N. Y.; P. Hodgman, Moundsville, W. Va.; Abner Hawkes, Westbrook, Me.

Then came a general discussion again, in which a number of questions were brought before the house and discussed freely.

## THREE FAITHFUL MEMBERS OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION WHO HAVE NEVER MISSED A MEETING.



A. R. ROOT, Princeton, N. J.



Secretary T. A. RANDALL, Indianapolis, Ind.



D. V. PURINGTON, Chicago, Ill.

The discussion was followed by a report of the Committee on Technical Investigation, by Prof. Edward Orton, Jr., of Columbus, Ohio. This committee was installed several years ago, and has been steadily making investigations into the technical features of clay work. Prof. Orton only made a short talk to the convention, and said that he would make a detailed report to the secretary which could be issued in pamphlet form and distributed to the members.

While the discussion of this technical work was going on, Arthur B. Rogers, of Boston, Mass., came in with a couple of visitors, and introduced Mr. Robt. S. Peabody, president of the Boston Society of Architects, and Mr. Peabody made an address of welcome to the convention. The other gentleman accompanying Mr. Rogers was R. Clifton Sturgis, of Boston, Mass., who, on being introduced, made an interesting talk to the convention on the subject of "The Size of Brick." Both of these visitors were asked to remain a while after the adjournment of the meeting so that those present might shake hands with them. Then the meeting adjourned until the afternoon.

The afternoon session opened with a paper by Charles F. Burnham, Milwaukee, Wis., "Advantages of the Continuous Kiln," which was the subject of much discussion, because the matter of continuous burning is one receiving quite a lot of attention by the trade to-day.

It was followed by a paper on "The Fuel Question," by Alfred Yates, Johnsonburg, Pa.

After some general discussion, there was a pleasing diversion not down on the program. This diversion came in the way of a talk by Prof. Orton on the question of metallurgy, at least that was the way it was introduced, but what it proved to be was a presentation to President Fiske on behalf of the association of a silver vase, which was made in a happy little speech. Then, after Mr. Fiske had expressed his thanks, Prof. Orton led the discussion "Coal vs. Wood as a Fuel," which was indulged in by many of those present.

The next thing on the program naturally following this discussion, was that relating to "Grate Bars or No Grate Bars." The discussion on this subject being led by W. A. Eudaly, of Cincinnati, Ohio—and the discussion waxed spirited.

Next came a general discussion of "Is it Practicable to Reburn a Clamp of Soft Brick?"

The general discussion of the day wound up with a discussion of "Sand-Lime Brick," which, though it was the last subject, was by no means the least, for it was quite extensively discussed. The discussion was led by S. V. Peppel, of Columbus, Ohio.

After this came the report of the Committee on Resolutions, and then, on motion, the meeting adjourned *sine die*.

### THE AMERICAN CERAMIC SOCIETY.

The American Ceramic Society met according to program at Boston, Mass., February 2 at 10 a. m. with a liberal attendance and Vice President Walker in the chair. Officers were elected for the ensuing year as follows: Prof. Edward C. Stover, of the Trenton (N. J.) Pottery Co., president; Prof. Heinrich Ries, Ph. D., Ithaca, N. Y., vice president; Edward Orton, Jr., E. M. Columbus, Ohio, secretary; Stanley G. Burt, Cincinnati, Ohio, treasurer; Albert V. Bleininger, Columbus, Ohio, manager for 1903; Adolph Hottinger, Chicago, Ill., manager for 1904; E. E. Gorton, Groton-on-Hudson, N. Y., manager for 1905.

The following is a list of the new associate members elected: I. Mandle, dealers in clays, St. Louis, Mo.; P. L. Youngren, builder of continuous kilns, Milwaukee, Wis.; H. B. Wright, draftsman and constructor for fire brick industry, Bolivar, Pa.; John H. Welch, superintendent Stoneware Pottery, Memphis, Tenn.; Oswald Spier, terra cotta manufacturer, Perth Amboy, N. J.; John Sant, clay dealer, East Liverpool, Ohio; Prof. C. W. Parmelee, director Ceramic Department New Jersey State College, New Brunswick, N. J.; I. E. Hardy, superintendent of Tiffany Enamelled Brick Co., Mokena, Ill.; W. H. Gorsline, sewer pipe manufacturer, Rochester, N. Y.; L. F. Kwiatkowski, sand-brick engineer, New York, N. Y.; P. A. Fleming, chemist, H. C. Frick Coke Co., Scottdale, Pa.; A. E. Barnes, enamel brick manufacturer, Norristown, Pa.; G. N. Jeppson, superintendent Norton Emery Wheel Co., Worcester, Mass.; W. H. Grueby, art pottery and faience manufacturer, Boston, Mass.; S. E. Frank, sand-brick industry, New York, N. Y.; T. R. Eskesen, terra cotta manufacturer, Matawan, N. J.; Chas. Weelans, Superintendent Monument Pottery Co., Trenton, N. J.; S. E. Robineau, editor *Keramic Studio*, Rochester, N. Y.; E. H. Defebaugh,

Rock Products, Louisville, Ky.; Frank J. Colgan, salesman for A. M. & W. H. Wiles Co., Grassy Point, N. Y.

There were fifteen papers on the literary program which, together with the time given to discussion, made the meeting a busy one at all its sessions.

Among the more notable contributions at this meeting were Prof. Binn's paper on "Matt Glazes" in which he attributes the development of mattness principally to Alumina; Mr. Stover's paper on "Ceramic Colors," which was represented by a series of 1,200 trial pieces; Mr. R. C. Purdy's on "White Stoneware Glazes," which takes a long step forward in reducing the compounding of that glaze to a definite system; Mr. S. V. Peppel's on "The Sand-Lime Brick Industry," which for completeness and exhaustiveness is probably one of the finest contributions which the society has ever had. There were other excellent papers, several of which were included in the list of those read by title.

The meeting adjourned about one o'clock Wednesday to make room for the brick manufacturers' meeting, but a number of members remained in the city for some days to visit points of interest.

The attendance was large, in fact, it was the largest attendance ever had at a meeting, about forty in all, and the society feels that it is progressing not only in members, but in value and character of discussions.

### THE SOCIAL SIDE.

On Wednesday evening a banquet was tendered the visiting delegates and their ladies by the New England members of the National Brick Manufacturers' Association. Covers were laid for 350 and it was a great occasion. President Fiske officiated as toastmaster, and after the menu had been disposed of, introduced General Curtis Guild, Jr., Lieutenant Governor of Massachusetts, who made a happy little speech and started the jollity of the occasion.

Then came the leader of the Master Builders, Wm. H. Sayward, of the National Association of Master Builders, who is also secretary of the Boston Association of Master Builders, and replied to the toast "Master Builders." D. V. Purington answered to "Our Association," Charles A. Bloomfield, of New Jersey, who is never absent himself, answered for "Our Absent Members." It fell to the lot of the genial secretary, T. A. Randall, to answer for "Our Silent Partners," that is, he read the answer to this toast which had already been written by H. C. Mueller, of Zanesville, Ohio.

Then came "Brick Without Straw," made by Lafayette J. Blair, Boston, Mass., and then the "Humor and Poesy of the Brickyard" was pointed out by Mr. Brian J. Dunn, Bangor, Me.

"Dixie Land" fell to W. F. Scott, St. Louis, Mo., and the program of the evening was wound up by D. W. Waldron discussing "Character and Clay," after which there was singing of one verse of the old hymn "America," which closed one of the most enjoyable banquets ever attended by the brickmakers and their friends.

### The Wisconsin Meeting.

The clay workers of Wisconsin and neighboring States held their annual meeting at Green Bay, Wis., January 27-29, at which there was an interesting program, including both business and social features. Officers were elected for the Wisconsin Clay Workers Association for the ensuing year as follows: F. L. Sanburn, Portage, president; G. W. Kennedy, Manitowoc, vice president; H. A. Bright, Black River Falls, secretary; John Ringle, Wausau, treasurer. It was decided to hold the next annual meeting at Portage, Wis.

The Villa Park Brick Co., Denver, Colo., has been incorporated with a capital stock of \$10,000.00, by C. G. Pitschke, R. W. Hardman, John Noel, Francis Noel and Lelia Noel, of Denver.

The American Brick Co., Detroit, Mich., is reported as having closed contract for land near Michigan City, Ind., on which to erect a plant to manufacture brick from sand by a patent process.

Reports state that the machinery is being put in place at the plant of the New Red Brick and Tile Co., Ithaca, N. Y., and it is expected that the manufacturing will be well under way by spring.

The White & May Brick Co., Jackson, Miss., has been incorporated with a capital stock of \$50,000.00, to manufacture brick and tiling. The incorporators are: J. J. White, W. L. May, J. W. Johnson and others.

### HERE AND THERE IN THE CLAY FIELD.

J. C. Welsh is erecting a brick plant at Deball's Bluff, Ark.

The Alger Oil and Machinery Co. is starting up a new brick factory at Whatcom, Wash.

William Randall is erecting a brick plant at La Harpe, Kan., to manufacture 20,000 brick daily.

The New Orleans Brick and Tile Manufacturing Co. is figuring on building a plant at Orange, Tex.

The City of Winnipeg, Manitoba, Canada, is considering the question of building a sewer pipe plant.

The Southwestern Brick Co., Lake Charles, La., have bought clay property and taken steps to build a brick plant.

The William Brunt Pottery Co., East Liverpool, Ohio, was damaged by fire recently. Loss estimated to be \$25,000.00.

The South Mountain Mica Manufacturing Co., Lancaster, Pa., say they have an excellent deposit of kaolin on their property.

The brick plant of Curry & Robynnet, of Sandwich, Ontario, Canada, was damaged by fire to the extent of \$1,000.00 February 9.

The Tuna Valley Pressed Brick Co., Des Moines, Iowa, has been incorporated with a capital stock of \$80,000.00, by C. E. Foster and Wm. Hodges.

Reports from St. John, N. B., state that the works of the Poole Pottery Co., about two miles from the city, were completely destroyed by fire.

The L. D. Haggerty & Son's new brick plant at corporators are: J. J. White, L. W. May, J. W. Bricks a day, and this will be doubled in a short time.

Messrs. Nyenhuis Bros. have purchased a large tract of land, costing \$6,000.00, at Muscatine, Iowa, on Fulliam avenue, for the purpose of erecting a brick plant.

The Mont Clare Brick Co., Norristown, Pa., is building a new kiln and preparing to enlarge its plant. They expect to have an exceedingly busy season this year.

T. Cooper Ramsey, Delta, Pa., is at the head of a company which is organizing at that place and proposes to erect a brick plant with an annual capacity of 8,000,000 or 12,000,000.

The Black Hawk Pressed Brick Co., Sears, Ill., has been incorporated with a capital stock of \$40,000.00. The incorporators are: Alfred E. Green, A. S. Wallace and Moses Rothschild.

At last reports work was progressing nicely on the new brick plant being built by E. T. Lewis & Co., Chattanooga, Tenn. It is expected the new plant will be ready for operation soon.

The Morgan Brick Co., Norristown, Pa., has declared a 5 per cent. dividend, and it is said they made 3,500,000 brick during the past season and expect to exceed that number this year.

The Pamlico Brick and Tile Co., Washington, N. C., has been incorporated with a capital stock of \$100,000.00. The incorporators are: W. A. Blount, W. H. Lodge and C. S. Doughty, all of Washington.

The Manteno Brick Co., Manteno, Ill., has been incorporated to manufacture brick, with a capital stock of \$35,000.00, with the following incorporators: Andrew Lockie, Ralph E. Vail and David Beard.

The Fort Wayne Brick and Tile Co., Fort Wayne, Ind., has been incorporated by Wm. Geake, Wm. Busching, Bernard Bornstein, Otto D. Seidel and Henry Keller, all of Fort Wayne. Capital stock \$20,000.00.

A new company, to be known as the Susquehanna Fire Brick Co., is being organized to develop clay property at Drury's Run (not a post-office), in Clinton County, Pa. Interested parties live at Renovo, Pa.

The Drew Brick Co. has been incorporated at Monticello, Ark., with a capital stock of \$16,000.00. The incorporators are: Warren M. Anderson, president; J. G. Williamson, R. W. Finn, J. H. Glythe and Chas. T. Duke.

The stockholders of the New York Brick Paving Co., Syracuse, N. Y., met recently and elected the following officers: J. L. King, president; W. B. Cogswell, vice president; E. M. Klock, treasurer; J. L. Breed, secretary and general manager.



The Scandinavian Brick Co., Des Moines, Iowa, has been incorporated with a capital stock of \$10,000.00, to make brick at Southeast Des Moines, Iowa. The incorporators are: J. M. Stork, A. W. Carlson, Henry and J. A. Bockman and Gus Alstrom.

The Lehigh Fire Brick Works has been incorporated with a capital stock of \$60,000.00. The treasurer of the company is Joshua R. Morton, Catasauqua, Pa. Among the directors are: S. R. Thomas and D. H. Thomas, of Hokendauqua, and W. Vollmer, of Philadelphia, Pa.

The Auburn Shale Brick Co., Reading, Pa., held its annual meeting recently and elected the following directors: Wellington Van Reed, George S. Hummel, William H. Morris and George G. Ruth. The officers are: Mr. Van Reed, president; Mr. Hummel, vice president; and Mr. Morris, secretary-treasurer.

The Boone Brick, Tiling and Paving Co., Boone, Iowa, has had a fair business the past season, the output being 5,000,000. They have done nothing in the way of making tile. A dividend of 15 per cent. was declared at a recent meeting for the past year, payable in stock. Their plant cost \$50,000.00 and is a modern one.

The Alton Paving and Fire Brick Co., Alton, Ill., held its annual meeting at Hotel Madison recently and elected the following directors: Wm. Elliot Smith, Balser Schiess, E. C. Lemen, Edward Rogers and Eben Rogers. Mr. Edward Rogers was elected president of the company, and Eben Rogers, secretary-treasurer. They declared a dividend of 6 per cent.

The Robinson Clay Product Co., Dayton, Ohio, has purchased the plant of the Robinson-Merrill Co. The officers of the Robinson Clay Product Co., which absorbs the Robinson-Merrill Co., are about the same as the other concern. The Robinson-Merrill Co., was incorporated in 1900 with a capital stock of \$500,000.00, and is one of the largest firms in the State.

A new industry, and one that is said will mean much to Colorado, has been incorporated by the Diamond Brick Co., Canon City, Colo., to produce a silica brick, which is said to be equal, if not superior, to any produced in America. This company has installed a large dry crusher and built a circular kiln of 60,000 capacity, which will be used exclusively for burning the product.

The Caldwell-Godchaux Brick Co., Ltd., Abbeville, La., has been organized with a capital stock of \$25,000.00, to manufacture and handle building material. They have purchased the steam brick plant of G. Caldwell & Sons, on the west side of Bayou Vermillion and are removing it to a new location below Abbeville, on the Godchaux switch. The officers are: Gus Godchaux, president; Summer Caldwell, vice president; Frank H. Godchaux, secretary-treasurer.

The Christy Fire Clay Co., St. Louis, Mo., held an annual meeting recently and elected the following officers: Calvin M. Christy, president; W. C. Morris, vice president; R. D. Hatton, secretary. R. D. Hatton has been promoted from the assistant secretaryship to the position vacated by F. P. Jones, who has been elected assistant cashier of the Mechanics' National Bank. R. H. Miller has been advanced to sales agent, V. P. Ring having resigned on account of ill health.

The Champlain Brick Co., Mechanicville, N. Y., recently held a meeting and elected the following directors: Dr. C. W. Keefer, Nelson C. Squires, John F. Norman, Ezra Swartout, C. E. Hoskins, William C. Talmadge and William H. Duffney. The following officers were also elected: Dr. C. W. Keefer, president; Nelson C. Squires, vice president and secretary; C. E. Hoskins, treasurer. This plant will run all winter and has an average output of 90,000 building brick a day.

The Harbison-Walker Refractories Co., of Pittsburgh, Pa., who bought the Portsmouth and Kentucky Fire Brick Co. some months ago, recently held a meeting of its stockholders and elected the following directors: L. C. Turley, G. E. Carlyle, S. P. Adams, D. B. Hutchins, A. P. Greene, H. H. Croft and S. C. Walker. As will be seen, there have been some changes in the directory. A. T. Johnson, J. L. Watkins, Simon Labold and Judge J. W. Bannon, dropping out. The following officers were also elected: L. C. Turley, president; G. E. Carlyle, treasurer; A. P. Greene, secretary; S. P. Adams, works manager, and D. B. Hutchins, sales manager. The name of the company was changed to the Portsmouth Harbison-Walker Co. The total capacity of these plants annually is 70,000,000 bricks.

The Grand Rapids Consolidated Brick and Tiling Co., Grand Rapids, Mich., is planning to make extensive improvements in the spring. Another yard will be opened adjacent to the East Bridge street plant, which will double their capacity, and modern methods of burning and treating clay will be installed. The Sparta Brick yards, in which the company is largely interested, will be improved. Henry Joseph, who succeeds H. D. Brown, will manage the consolidated company's downtown offices. Mr. Brown has accepted a position with the Valley Brick Co.

The Central Ohio Clay Co. is the name of a new company organized at Cardington, Ohio, with a capital stock of \$15,000.00, to develop the Iberia fire and brick clay. The company has purchased three acres near the elevator at St. James, Ohio, and expect to have a plant in operation there at an early date. The headquarters of the company will be at Cardington. The following officers have been elected: J. W. Rice, president; D. S. Green, vice president; D. Metzger, secretary; G. C. Miller, treasurer, and J. D. Fowler, manager. These officers, with W. P. Vaughan and H. M. Betts constitute the directory.

The Stockholders of the Purington Paving Brick Co., held their annual meeting at the company's offices in Galesburg, Ill., recently, at which the reports for the past year's business showed that 1902 had been an excellent year for the company. The officers chosen for the year are as follows: L. V. Purington, president; W. S. Purington, vice president and general manager; W. H. Terwilliger, secretary, and Charles H. Chamberlain, treasurer. Mr. Terwilliger comes from Chicago, and for some time past has held the position of sales manager of the Illinois Brick Co.

The Donnelly Brick Co., New Britain, Conn., held an annual meeting recently and elected the following directors and officers: Thomas H. Brady, James M. Curtin, H. M. Clark, Thomas C. Smith, Patrick McCabe, John J. Walsh and James Roche. Mr. Roche succeeded Mr. John Boyle. A dividend of three per cent. was declared and the following officers elected: T. H. Brady, president; James M. Curtin, vice president; James Roche, secretary, and Patrick McCabe, treasurer and manager. Many improvements have been made and new equipment has been added to the plant to the extent of \$10,000.00.

#### The Connecticut Brickmakers Organize.

The brick manufacturers of Connecticut met at New Haven recently and formed the Connecticut Brick Manufacturers Association, and elected officers as follows: F. L. Stiles, of New Haven, president; F. I. Shears, of New Haven, vice president; F. C. Whitney, of Hartford, secretary, and Patrick McCabe, of New Britain, treasurer.

#### Piling Up for the Spring Trade.

The brick yards at Haverstraw and Stony Point, N. Y., have been accumulating a surplus of brick to be in good shape to take care of the demand when navigation opens up. Reports from Haverstraw state that there is a surplus of 77,000,000 brick on hand. There are thirty-eight firms in the brickmaking business in the two towns, and thirteen of these firms have fifteen barges loaded ready to ship to market as soon as the ice permits. The following are among the principal manufacturers and have the amount of brick named on hand:

D. Fowler & Son, 4,950,000; Excelsior Brick Co., 4,900,000; William Malley, 3,800,000; D. Fowler, Jr. & Co., 3,700,000; T. McGuire, two yards, 6,700,000; Washburn & Co., 5,000,000; F. Dunnigan, 2,850,000; J. Shankey & Son, 2,000,000; Washburn & Fowler, 2,530,000; Reilly & Clark, 2,400,000; Rowan & Scott, 2,700,000; B. J. Allison & Co., 2,800,000; DeNoyes & Co., 2,000,000; Morrissey & Co., 2,000,000; T. G. Peck & Co., 1,250,000, inside yard; 550,000, outside yard; P. Goldrick, 1,400,000; Lynch Bros., 2,000,000; Wood & Allison, 1,125,000.

#### Clays of the United States.

Professional Paper No. 11, United States Geological Survey, now in press, by Dr. Heinrich Ries, is devoted to the clays of the United States, east of the Mississippi river.

After premising that most clays are supposed to contain more or less of the mineral kaolinite, which is commonly referred to as the clay base or clay substance, and that clay is usually formed directly or indirectly from the decomposition of rocks containing feldspar, due to weathering or to exposure to certain acid vapors, Dr.

Ries notes the division of clays into residual and sedimentary. The residual clays remain in place when a mass of feldspathic rock is weathered down, and in the southern States these residual clays are abundant in the entire area south of the terminal moraine of the glacial period. The sedimentary clays are washed down into the brooks and rivers and carried on to the lakes and seas, where they are spread out over the bottom as bedded or stratified deposits of clay, and they give rise to the types known as lake clays, estuarine clays, pond clays, moraine deposits, and river terrace deposits. The physical and chemical properties of clays, which affect their commercial value to a very large extent are briefly discussed, as also the methods of mining clays and shale and preparing them for manufacture.

The geological distribution of the clays east of the Mississippi by kinds and by States is described, in the course of the discussion many valuable analyses of the clays being given and many references to the literature of the subject being introduced.

The report concludes with a summary of the clay working industry in the United States, east of the Mississippi river, in which the production and value of the various kinds of brick and pottery are set forth, together with the localities in which are situated the chief centers of this kind of manufacture, and also the rank of the States as producers of brick and pottery. Ohio, Pennsylvania and New Jersey are the leading States in the clay industry.

#### A New Roofing Tile Plant.

The Mound City Roofing and Tile Co., with offices in the Columbia Building, St. Louis, Mo., is building a new roofing and tile plant which they say will be one of the most modern and up-to-date plants for making roofing tile that there is in the country. They will make two different sizes of corrugated interlocking roofing tile of the most approved pattern, and will also make a new S interlocking roofing tile. In addition to these special lines, they will make the regular plain shingle tile and also the "Promenade" tile which is used for roofing large flat buildings. Being located at St. Louis, they are naturally in a fine clay center, and they say they have the finest clay in the country for making vitrified roofing tile. They will make tile in all the different colors and glazes and will have their plant ready for operation by the middle of March. Their works are located on Morgan Ford road and Tyler avenue. The officers of the company are: Henry Ruckert, president; F. P. Hunkins, vice president; W. P. Grath, secretary-treasurer, and W. C. Mitchell, general manager.

John H. Pitt will erect a plant at Jacksonville, Fla., for the manufacture of flower pots.

The Chappuis Brick Co., at Raney, La., is operating its plant day and night.

The Arenac Clay Co. has been organized at Standish, Mich., with a capital stock of \$50,000.00, to develop clay beds.

The Table Rock (Neb.) Clay Co. is making improvements about its yards and will add a new kiln and machinery.

The Consolidated Navel Stores Co., Savannah, Ga., has bought out The Chattanooga Pottery Co., with plants at Daisy, Tenn.

The plants of the Montello Brick Co., at Reading, Pa., were destroyed by fire January 22, but arrangements have been made to immediately rebuild.

The Cumberland County Brick Co., with works located at Hunter's Run, near Carlisle, Pa., has a contract to furnish the Pennsylvania R. R. Co. 50,000,000 bricks for the New York tunnel.

The Berry Brick Co. has been incorporated at Columbus Ohio, with a capital stock of \$40,000.00. The incorporators are: G. O. Berry, A. E. Berry and M. W. Berry.

The Hydraulie Brick Co., Louisville, Ky., is erecting four new kilns and making other improvements at the yards at Twelfth street and Ormsby avenue, and will spend a total of something like \$100,000.00 in its improvements. The president of the company is Mr. A. Dumesnil.

The Southwestern Brick and Tile Co., Ltd., 512 Macheca Bldg., New Orleans, La., has elected the following officers and directors for the ensuing year: S. T. H. Bradley, president; Henry V. Stentz, vice president; L. A. Atzennofer, secretary; Francis Benseau, treasurer; Lyle Saxon and E. A. Blakeman, directors.



## SOMEWHAT PERSONAL.

## Salt.

The Colonial Salt Co. has been incorporated at Jersey City, N. J., with a capital stock of \$350,000.00.

The Warsaw (N. Y.) Salt Works, which has been closed down for some time, have been started up recently.

The Pennsylvania Salt Manufacturing Co., Philadelphia, Pa., will build an addition to its plant to cost \$10,000.00.

Mr. C. J. Granger, Palestine, Tex., is said to have discovered a vein of rock salt and proposes to organize a company to develop it.

A new salt firm has been organized at Gloucester, Mass under the name of Geo. J. Tarr & Co., to import salt from Trapani, Liverpool, Cadiz, etc.

The plant of the Port Huron (Mich.) Salt Co. was shut down for ten days to make the required annual repairs and starts to work on the new year's run with a capacity of 3,000 barrels a day.

The National Salt Co., of which N. S. Beardslee is president, is moving its offices to Ithaca, N. Y., in order to centralize the offices with regard to the salt fields now controlled by the company.

The Genesee Salt Co., with offices at No. 5 Harrison street, New York City, and works at Piffard, N. Y., is in the hands of a receiver. Henry G. Piffard has been appointed receiver. The difficulty embarrassing the company seems to have arisen from the high price of coal.

The American Salt Co., which operates at Belle Isle, La., has been at work for quite a while sinking a shaft through quicksand in order to get at the salt direct. It is said that the work will be completed in about two months more. C. Q. Freeman is in charge of the work at the mines.

Green & Elliott, of Chicago, Ill., who recently went to Wellington, Kan., to bore some salt wells under contract for parties developing salt property there, have finished their work, and it is said that they found evidence of salt rock ranging from 85 to 100 feet thick, at a depth of 400 feet.

The Manitowoc (Wis.) Land and Salt Co. held its annual meeting the past month and re-elected the old board of directors and officers for the ensuing year as follows: Henry Hinrichs was re-elected to the office of president, M. F. Murphy will be the general manager, and W. E. Murphy acting manager.

The Salt Springs Solar Salt Co. held its annual stockholder's meeting recently at Syracuse, N. Y., electing officers for the ensuing year and transacted a lot of other business. The company has under consideration plans for erecting two new plants. The officers elected for the ensuing year are: W. A. Wynkoop, president and treasurer; W. E. Hopkins, vice president and A. T. Armstrong, secretary.

The Oatka Mining Co. has been organized recently to build a salt plant at Wyoming, N. Y. Many of the promoters of the concern are members of the Worcester Salt Co., which has a plant at Silver Springs. The main offices of the company will be in New York City. The plant at Wyoming will have a capacity of 10,500 tons a day, and will be in charge of John H. Duncan, who has been in the salt business at Syracuse and Silver Springs for a number of years.

The Luddington (Mich.) Salt Co. has been organized with a capital stock of \$50,000.00, to manufacture, buy and sell salt, lime, cement, etc. The incorporators are: John C. Post, Chas. E. Monroe and George H. Stanberry. Mr. Post has been manager in Milwaukee, Wis., for the International Salt Co., and has given up his position to manage the new concern. The headquarters of the new company will be at Milwaukee, where they will establish warehouses and soon open up general offices. The officers of the company are: J. S. Stearns, Luddington, Mich., president; M. F. Butters, Luddington, vice president, and J. C. Post, Milwaukee, secretary-treasurer.

The Sidney Stone Co., Lincoln, Neb., is enjoying a good run of business.

The Wadsworth Stone and Paving Co., Pittsburgh, Pa., has been incorporated with a capital stock of \$10,000.00.

The C. E. Tayntor Granite Co., of Hallowell, Me., is figuring on erecting finishing sheds at Shepherds Point at the southern end of Lewistown.

The Union Carbide Co., of Chicago, Ill., has bought 640 acres of limestone land near Mackinac City, Mich., on which it is said a plant will be erected to manufacture carbide.

John O'Brien, former superintendent of the Illinois Stone Co., has taken an interest in the Hughes & Shutts Co., of Rockport, Ill., and will open a branch office at Lemont, Ill.

The Duluth Crushed Stone Co., Duluth, Minn., has been incorporated with a capital stock of \$50,000.00. The incorporators are: C. P. Frank, G. A. Tomlinson, C. A. Congdon, C. A. Duncan and N. J. Olcott.

Reports from Waterloo, Iowa, state that there has been new blood and new capital put into the Waterloo Stone Co., and it is said that the works of this company will be considerably enlarged and a crusher plant installed.

The Black Hills Clay and Marble Co., which owns large holdings of land near Custer City, S. D., is shipping out about thirty tons of mica a month, and it is said they have fine marble and also lithograph stone on their property.

The Alexander McDonald Granite Co., Patterson, N. J., has been incorporated with a capital stock of \$25,000.00. The incorporators are: Frank McDonald, William L. Orne and Alfred R. Baxter.

The Grand Rapids (Mich.) Stone and Granite Co. held its annual meeting during the past month and elected officers as follows: C. M. Kelly, president; Cornelius Clark, vice president; C. B. Nye, secretary, and R. D. Graham, treasurer. The company is capitalized at \$20,000.00, and will put in a complete equipment of steam shovels, dump cars, screens, etc.

A recent issue of the Milwaukee, Wis., *Sentinel* contains an interesting interview with Capt. J. W. Grant, president of the Grant Marble Co., of that place, who mentions incidentally that he began to make his living when he was nine years old. He became connected with the stone business by going to work for Davidson & Son in their marble yard in 1877, and after ten years' work in the establishment he bought it out. Five years ago he moved it from its old location on Fowler street to its present location, and the concern was incorporated in 1894 with him as president. At the present time this concern employs 150 men besides 25 men who are putting marble finishings in buildings.

The Wisconsin Building and Supply Co. has been incorporated at Milwaukee, Wis., by A. S. Austin and W. O. Thomas. The company will handle building material, including cement, lime, stucco and clay products.

At a meeting of the directors of the New England Lime Co., held at Caanan, N. Y., Mr. Wm. Canfield tendered his resignation as vice president and salesman of the company. He still retains his position in the directorate, however. Mr. Canfield has purchased limestone quarry property and it is said he will enter the lime business individually.

Arthur L. Fisher, Delphos, Ohio, is a dealer in building material, of the rock product class, who seems to be well fixed in the way of supplies on all sides. He has a model crushing plant and quarries for furnishing his own crushed stone, which would apparently put him on the ground floor when it comes to figuring on stone and cement work. He handles lime, cement, plaster, etc. Also ice and coal.

The Urschel Lime Co. held its annual meeting during the past month at Sugar Ridge, Ohio, and elected officers as follows: J. W. Urschel, president and general manager, and B. H. Urschel, secretary and treasurer. These with M. L. Case, Frank Merry and Mr. Herring are the directors. During the past year \$5,000.00 in improvements were made to the plant at Sugar Ridge, which now employs from 25 to 30 men the year round.

## Side Talk.

The Sturtevant Mill Co., Boston, Mass., have a spacious sample room where the machinery of this company can be seen in operation by prospective buyers, and they are cordially invited to visit their plants and see these machines at work on their own material before purchasing.

The Imperial Plaster Co., Toronto, Ohio, is sending out a little hanger containing a picture of the King Edward Hotel, in which was used 1,629 tons of wood fiber plaster. On the back of the hanger is listed a number of buildings in which wood fiber plaster has been specified.

We have an illustrated catalogue which tells about the Barney Conveyor System, gotten out by the Jeffrey Manufacturing Co., Columbus, Ohio, who are manufacturers of this system. The book has a characteristic cover, an imitation of a brick wall, and is artistically illustrated with views of the conveyor system at work.

The latest catalogue issued by the Main Belting Co. is of special interest to all users of "heavy service" belting. This company is making a specialty of the manufacture of belting for heavy work, heavy machine driving, and belting for the economical handling of rough materials of every description, under all conditions. Your request by letter, or postal card, brings their catalogue.

We have been favored with a calendar by the Slatington-Bangor Slate Syndicate, of Slatington, Pa., of which James L. Foote is manager. The calendar is of mammoth proportions, done in blue and red and incidentally tells that the Slatington-Bangor Slate Syndicate are miners, shippers and exporters of slates of all kinds, and are always glad to make prices on anything from a square of roofing to a whole supply of roofing, blackboard and structural slates.

J. W. Voglesong, Elyria, Ohio, is issuing a little booklet especially to manufacturers of sand mortars, with a view to encouraging investments in the manufacture of wood fiber plaster. It tells about the advantages of wood fiber plaster; then those interested can get information from Mr. Voglesong about machinery for making wood fiber because he makes this machinery, and will be glad to tell you how it works, as well as give estimates for the equipment of plants.

F. B. Mordie, Lake City, Fla., is taking an active interest in the question of developing the clay and marl resources of that State, and writes us that he will be glad to communicate with parties desiring to take an interest in building up industries in the line of clay working and cement manufacturing in that State. He is very enthusiastic over the outlook, and also in regard to the quality of raw material, and will likely be glad to give in detail to those interested, all such information that they desire.

Among the filter contracts awarded to William F. Scaife & Sons Co., Pittsburgh, Pa., during January are the following: Secretary Hay, of Stoneleigh Court, Washington, D. C., 260,000 gals. per 24 hours; Allan Wood Iron and Steel Co., Conshohocken, Pa., 20,000 gals. per 24 hours; National Steel Co., Columbus, Ohio, gravity system, 300,000 gals. per 24 hours; Willard Office Building, Washington, D. C., 25,000 gals. per 24 hours; Thos. Gale's Apartment House, Washington, D. C., 12,000 gals. per 24 hours; Duquesne Club, Pittsburgh, Pa., 57,000 gals. per 24 hours.

J. R. Patterson, general manager of the Peerless Portland Cement Co., Union City, Mich., says we got him mixed up in a report of the meeting at Indianapolis last month, and had him down as representing the Peninsular Cement Co. This is an error. We do not know how it crept in, but will now say, by way of correction, that Mr. Patterson is connected with two cement companies. He is general manager of the Peerless Portland Cement Co., and also general manager and treasurer of the Sillexoid Portland Cement Co., but he is in no way connected with the Peninsular Portland Cement Co.



P. L. Simpson, Willoughby, Ohio, was among our callers this past month. Until a few months ago Mr. Simpson was in the engineering business at Chicago for himself, but some months ago he became connected with the American Clay-working Machinery Co., Bucyrus, Ohio, and is now representing them. He is taking quite a lively interest in the sand-brick problem and also in the matter of pulverizing machinery, and he tells us that they have a pulverizer that is one of the greatest things that was ever put on the market, and our readers may expect to hear something more about this pulverizer of their's soon. Speaking of business in clay-working machinery, he says his company is about four months behind on orders and they are simply rushed in every department.

We have received from Mr. F. W. Mahood, Apartment 20, Garfield Flats, Washington, D. C., copy of reports on land property in which he is interested in the development. One is what is known as the Mundy-Lee tract of 240 acres situated near Stapleton, Va., and the other is on limestone property belonging to the Danner heirs, Brookewood, Augusta county, Va. The Brookewood property has limestone that is good for building purposes, for fluxing and also for manufacturing lime. There is also a report on the calcareous shale. The report on the Mundy-Lee tract is largely devoted to the mineral, of which this tract seems to contain quite a quantity, especially in iron and kindred ores. Both reports are very exhaustive and are accompanied by analysis of the different materials treated of. These reports were made by C. W. S. Turner, of Washington.

Spon and Chamberlain, the well known publishers of technical books, 123 Liberty street, New York City, are now publishing a book called Silico Calcareous Sandstones, by Ernst Stoffer, of Zurich, Germany. The work covers the subject of making building stone from quartz sand and lime, going extensively into the details of the chemical and technical principles of manufacturing. The work is profusely illustrated with plans of plants for different systems and also the drawings of machines used in process of manufacture. We have not yet had time to give the attention necessary to this work to enable us to make a brief digest and pass on its merits, but we can say that the subject matter has been handled by one of the best German students in this line of work. We note, too, that in addition to his own experiments, Mr. Stoffer has been making a study of the Schwarz system of manufacturing sand bricks. There is no doubt but what with the present interest manifested in this subject, there will be an active demand for this work. It is listed at \$1.00.

The Sturtevant Mill Co., Boston, Mass., say that few men realize the importance of a use of the stone breaker or crusher in connection with the stamp mill. The stamp, they say, is not a crusher, but a pulverizer, and should not be called upon to do crushing work. In fact, they open up a point that furnishes food for thought all along the line crushing and pulverizing in the following: "The preliminary crushing can be done in a jaw and toggle crusher at one-fifth the cost of any other machine. It is therefore economy to feed your finishers, whether stamps, rolls, or mills, with the finest ore that can be produced by these crushers. By installing an intermediate crusher, between the coarse breaker and stamps, at a small expense, the capacity of your mill will be increased to a large extent, and the wear and tear lessened materially."

According to the *Schweizerische Bauzeitung*, Herr Schwarz, a chemist of Zurich, has improved the system of manufacturing sand bricks by subjecting the materials to a special treatment before moulding. The lime and sand are mixed in a preparing machine, heated by a steam jacket. The inlet of water and air can be regulated so that much less lime is required (2 to 6 instead of 6 to 10 per cent.) and less powerful presses are needed for moulding. At the Industrial Exhibition in Dresden there was a model sand-brick works on the Schwarz system for an annual production of six million bricks. The plant is distinguished by simplicity, not only on account of the reduced number of mixing-machines (one being sufficient), but also of the absence of conveyors, hoists, etc. There are three moulding-machines, with adjuncts, each equal to the production of from 800 to 1100 bricks (10 in. x 5 in. x 2 1/2 in.) per hour—viz., 30,000 per day of eleven hours for the three. The cost price per 1,000 bricks, including interest and repayment of capital, is 15 frs. (12s. 6d.).

## Information Bureau

A Few of the Direct Inquiries Made to the  
Office of Rock Products During Last Month.

462.—We want machinery for the purpose of making concrete blocks.

463.—I am in the market for the following second-hand machinery for a No. 5 Gates crushing plant: boiler and engine, friction hoist, bucket elevator, quarry cars and small steam pump; also rail 20 pounds to the yard.

464.—We are in the market for 30 to 35 lb. re-layers.

465.—We want a 50 h. p. double drum hoist.

466.—We want a high pressure horizontal return tubular boiler 80 to 150 h. p.

467.—We are desirous of experimenting with clam-shell buckets in connection with cableway derricks.

468.—We contemplate adding another kiln to our plant.

469.—We want the address of producers of soap-stone slabs.

470.—We want to communicate with the manufacturers of strainers for slate sinks.

471.—I would like prices on cements and lime.

472.—I am in the market for 3/4 to 1 1/2 in. drill steel for hand drills.

473.—We want derricks.

474.—I want a rock crusher.

475.—We need rock drills.

476.—We want stone dump cars.

477.—We are in the market for engines.

478.—We want hoisting engines.

479.—We need stone saws.

480.—I want stone screens.

481.—We want to buy a 6 or 8 in. steam quarry pump that we can drive with belt or electric drive.

482.—We are figuring on a sand or grit dryer that will handle and screen from 30 to 50 tons of grit a day.

483.—We want prices on cement machinery—pneumatic weighers, packers, mixers, crushers, etc.

484.—We are in the market for Portland cement.

485.—We need pulleys and shafting.

486.—We want steel blades for marble and stone.

487.—I am in the market for T rails—50 lbs. per yard.

488.—We want hand power traveling cranes.

489.—I am in the market for full circle stiff leg derricks.

490.—I want stone machinery.

491.—We will install an electric light plant, and would like general information, catalogues, etc., from supply houses, machinery manufacturers and electric construction companies.

492.—We want a small kerosene engine—new preferred.

The Henry Martin Brick Machine Manufacturing Co., Lancaster, Pa., has just printed a new catalogue of brick machinery which contains a fund of good information for users and prospective users of clay working machinery and appliances. They illustrate and describe almost every thing you could think of from boilers and engines to wheelbarrows, and in addition to illustrating and describing the various machines they furnish for manufacturing brick and other clay products, the catalogue contains ground plans for different kinds of brick plants. We judge they will be glad to mail one of their catalogues to any one interested in brick yard machinery and other supplies.

## A Builders' Exchange Organized at Zanesville, Ohio.

There was organized in Zanesville, Ohio, very recently, a Builders' Exchange, which promises exceedingly well for the builders and material men of that city. The matter of organization was taken in hand several months ago by Mr. R. L. Queisser, general manager of the Ohio Pressed Brick Co., and after considerable effort was launched with a membership of over sixty-five, making it from the start one of the strongest in the State. While the subject of a builders' exchange had been given considerable thought and work in the past, it was never brought to a head until the present time.

This new exchange starts out under auspicious circumstances. The directors have already rented a suite of two offices and an exhibit room, 30 by 60 feet, in which will be exhibited the usual building material, supplies, etc. In addition, various others of the industries of this city will have exhibitions. The directors have also arranged for a number of special spaces which will be used as offices by the various contractors; a consultation and a plan room are also arranged for; and an attorney will have his offices with the exchange to look after the business of the exchange and its members. A library and reading room are also one of the features.

A secretary has been placed in charge of the rooms and will devote considerable of his time to the work of the exchange. In addition to the regular membership, the exchange has a special "subscribing membership," who have the floor privileges of the rooms, but no voice on any questions relating to the mechanical arts.

The officers and directors for the ensuing year are: President, R. L. Queisser, general manager of the Ohio Pressed Brick Co.; vice president, Gilbert Snyder, of the Snyder Roofing Co.; treasurer, Wm. M. Shinnick, secretary of the Mosaic Tile Co. The other directors are: William Adams, of Adams Bros., contractors; T. B. Townsend, of the Townsend Brick and Contracting Co.; William C. Handsby, general contractor; H. B. Mechling, painter and paint supplies; G. E. Clossman, of the Clossman Hardware Co.; J. C. Bolin, president of the South Zanesville Brick and Sewer Pipe Co. Norris McHenry is secretary. The offices are located on the fifth floor of the new People's Saving Bank Building.

## Wanted and For Sale

One insertion, 25c a line; Two insertions, 50c a line; Three consecutive insertions with no change in the composition, 50c a line. Count eight words to a line; add two lines for a head.

### WANTED—HELP.

PRACTICAL MAN—To take charge of stone crusher at Olive Hill, Ky., for the manufacture of limestone into railroad ballast. Address J. W. HENDERSON, Sec. and Treas., Ashland, Ky.

MANAGER.—Suitable party to manage small cement plant in Georgia (300 to 500 barrels); interested party preferred. Call on or address J. H. WARNER, Chattanooga, Tenn.

### WANTED—POSITION.

A SMALL SUM invested in a concisely-worded description of what you want *right here* will no doubt secure you numerous replies and find that desired position for you quickly.

### WANTED—MISCELLANEOUS.

BUYERS OF GRIT—For rubbing marble, granite, etc.; car lots. Address W. R. KNOWLES, Clifton, Gloucester Co., N. B., Canada.

### FOR SALE—PLANT.

LARGE STONE QUARRY—25 solid acres of best North Carolina granite, together with 100 acres good timber land, for sale at a sacrifice. Address B. A. FESPERMAN & CO., Rockwell, North Carolina.

## ROCK PRODUCTS.

**THE CHEROKEE BRICK AND TILE WORKS—**  
In first class condition, doing a good business.  
Address D. W. TOWNSEND, Cherokee, Iowa.

**LET US SELL** that plant for you. See head of department for rates.

**FOR SALE—MACHINERY.**

**SEVERAL** second-hand Pulsometer pumps, boilers, engines and miscellaneous machinery. Address **MASLINS**, 165 First Street, Jersey City, N. J.

**COMPLETE QUARRY OUTFIT.**—One 28 h. p. double drum hoist and boiler, Rand steam drill, one steam pump, two 15-ton derrick riggings, tools, etc., for sandstone. Address **QUARRY**, care **ROCK PRODUCTS**.

**CRUSHER, ENGINE AND BOILER.**—A No. 7 Gates crusher, in good repair; 70 h. p. engine and 100 h. p. boiler, all in good repair and very little used. Address **COMMERCIAL LAND CO.**, Omaha, Neb.

**OF COURSE**

You are going to take in the **WORLD'S FAIR** at **ST. LOUIS** in 1904, and you cannot commence too soon to prepare for your trip—you know that. But what you maybe do not know, is that the Louisville, Henderson & St. Louis R'y is the

**WORLD'S FAIR LINE.**

It is the best line from **KENTUCKY** Points to **ST. LOUIS**, having through trains between **LOUISVILLE**, **OWENSBORO** and **EVANSVILLE** and the **WORLD'S FAIR CITY**.

Pullman Vestibuled Sleepers on night trains. Parlor cars on day trains. All trains arriving at and departing from the magnificent **NEW UNION STATION** in St. Louis.

When making preparations for your St. Louis trip, just count us in; you won't be disappointed.

**MORNING** and **NIGHT TRAINS** to **ST. LOUIS**.  
**THREE TRAINS** between **LOUISVILLE**,  
**OWENSBORO**, **HENDERSON** and **EVANSVILLE**.

AND THEY ARE ALL DAILY.

**PRINTING MACHINE.**—7x11 with 50 lbs. type.  
Address **ANDREW SCHUM**, Mariah Hill, Ind.

**FOR SALE—MISCELLANEOUS.**

**HAVE** you anything to sell that will probably interest a reader in **ROCK PRODUCTS**? Try a four or five-line advertisement for three issues—it will find a buyer.

**RESURRECT** the dead capital in that machine you no longer need by inserting the advertisement here. Quick returns at a small cost. Try it.

**THE PARAGON COPYING PAD** should be used by all granite dealers, draughtsmen and quarrymen; copies accurately any drawing, sketch or letter made with pen or pencil, making as many copies as desired; a child can operate it; used by all wholesale houses; 100 per cent. cheaper than blue prints as any paper can be used; never wears out. Price, \$3.00; samples of work cheerfully sent to those interested. Address **THE OFFICE SUPPLY CO.**, 47 Main St., Montpelier, Ohio.

W. H. RHAWN, Presl. J. K. SHARPLESS, Treas. C. E. RANDALL, Sec'y.

**Catawissa Car and Foundry Co.**

CATAWISSA, PA., U. S. A.

**Car Wheels, Castings, Forgings,  
Flat Cars, Mine and Dump Cars.**

AND ALMOST ANY ARTICLE OF COMMERCE  
OF WOOD OR IRON, OR BOTH.

Orders Promptly Filled.

Inquiries Solicited.

**ROBERT F. WENTZ, M. W. S. E.**

CONSULTING ENGINEER AND

**Expert Designer of Cement Plants.**

Your consultation solicited for the inspection of materials, examination and reports of cement properties, the analysis and testing of cement and cement materials.

I can furnish you Plans and Specifications; Estimates of Cost; Superintendence of Construction; Preliminary Sketches of Cement Plants.

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Lock Box 15, NAZARETH, PA.

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The now universally adopted standard to determine the cost of working granite; 2nd edition recently published; 70 illustrations. Send \$1 bill or P. O. order (no checks) for book, or write for descriptive circular, to **J. F. Brennan**, Peterboro, N. H.

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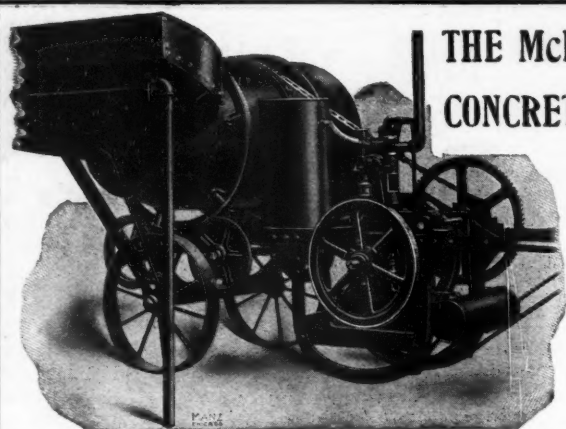
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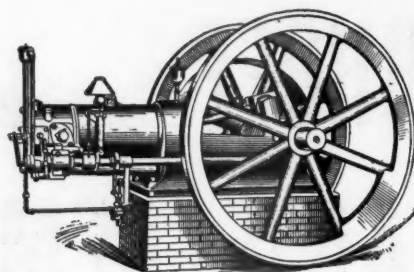
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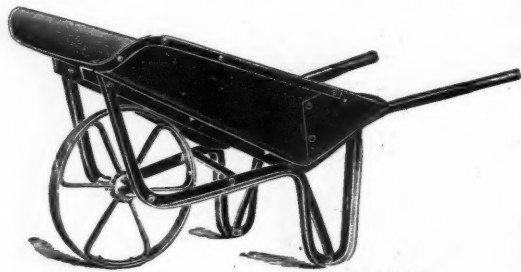
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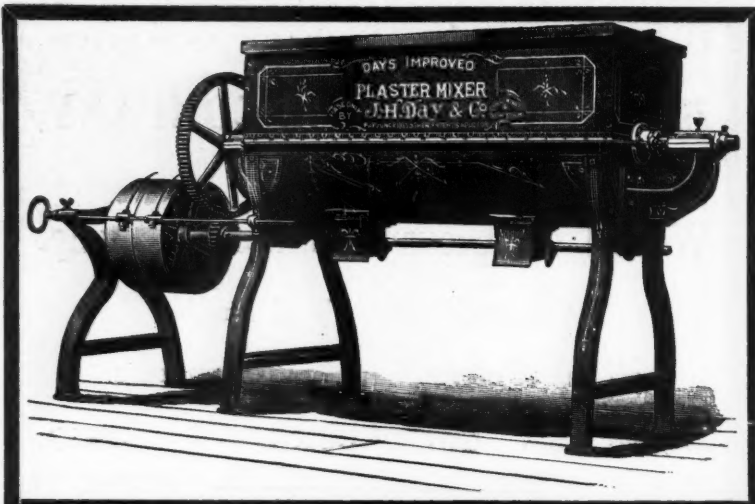
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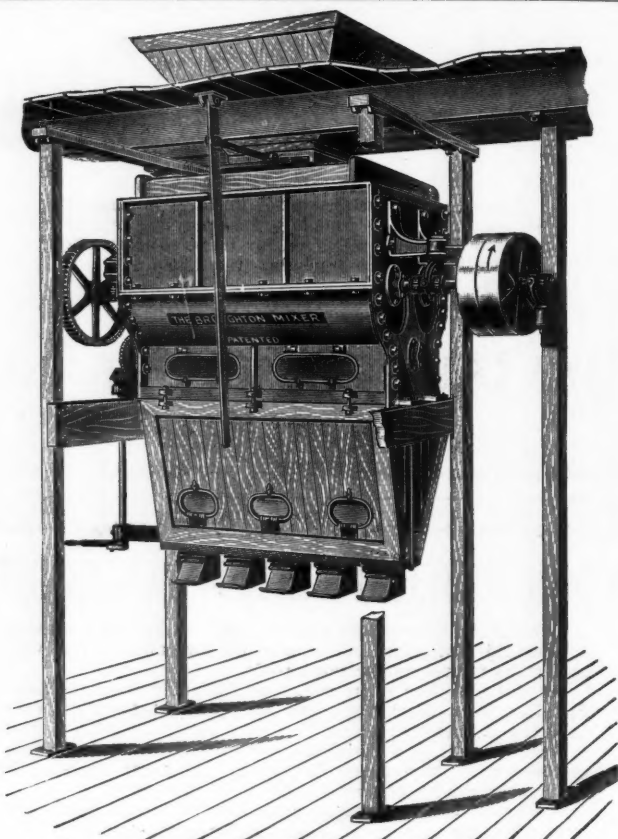
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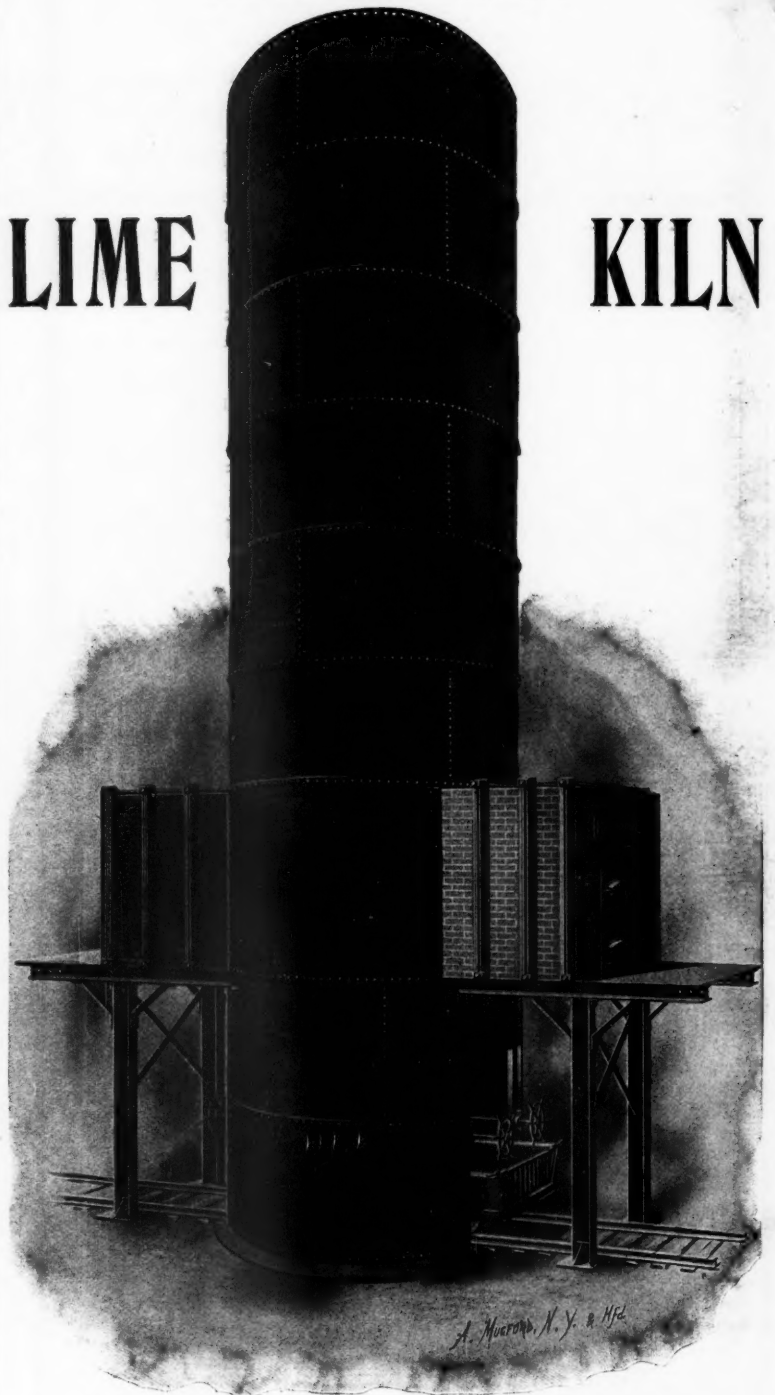
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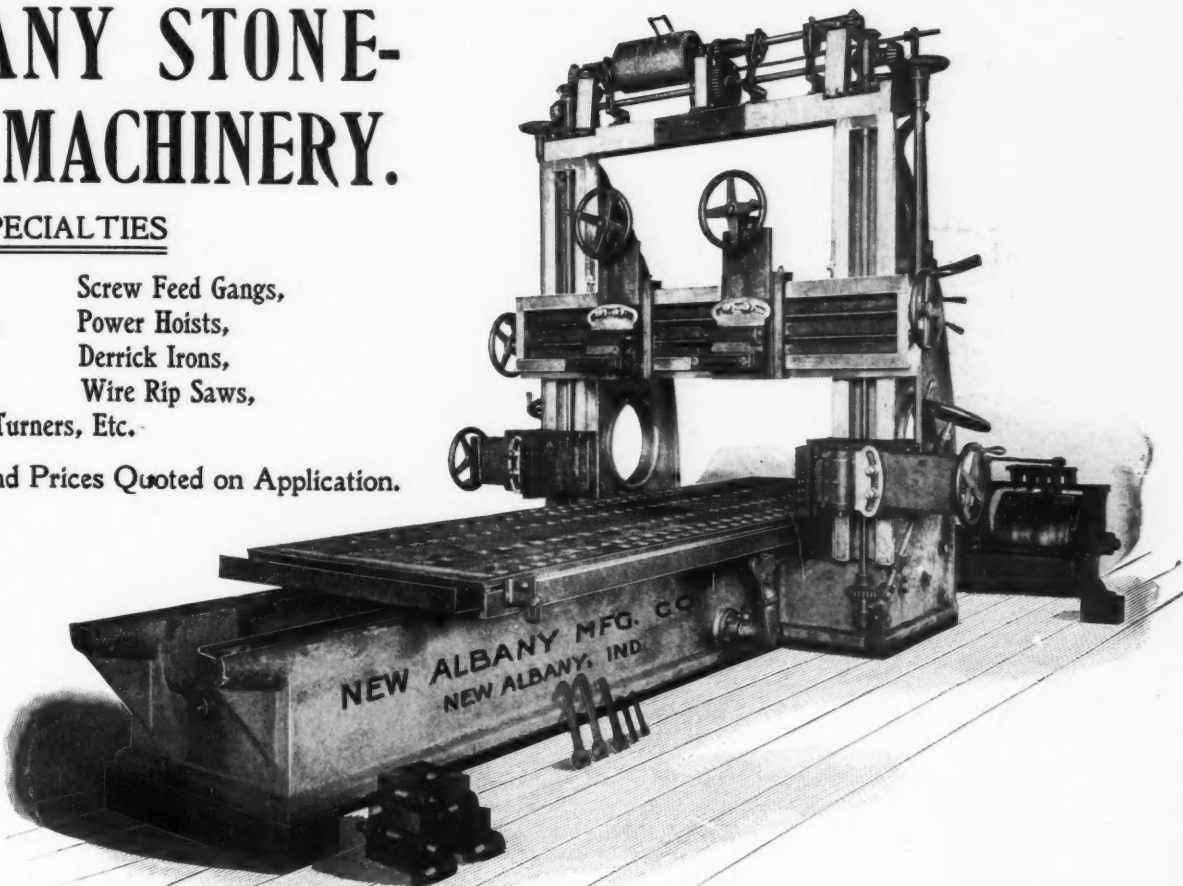
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RETSEF, N. Y., Oct. 24, 1901.

Howell Mining Drill Co., Plymouth, Pa.

Gentlemen:—Replying to your favor, asking what success we have had with your Air Drills, would say that we are now using twenty-six (26) of them and have had some in use for ten years. We find repairs very light, the drills giving good satisfaction. We have experimented with a great many other drills and consider your drills the most satisfactory for our purpose.

Yours truly, D. HYMAN, Gen'l Supt.

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# Columbia River Marble Company OF SPOKANE.

**CAPITAL STOCK,  
\$1,500,000.**

Par Value, \$1 Per Share, Full Paid, Non-Assessable; Set Aside for Treasury Purposes, 500,000 Shares.

President, . . . George W. White of New York City, also General Eastern Agent of the U. S. Marble Co.

Vice Pres., . . Thomas H. Greenway of Valley, Wash., also Superintendent of the U. S. Marble Co.

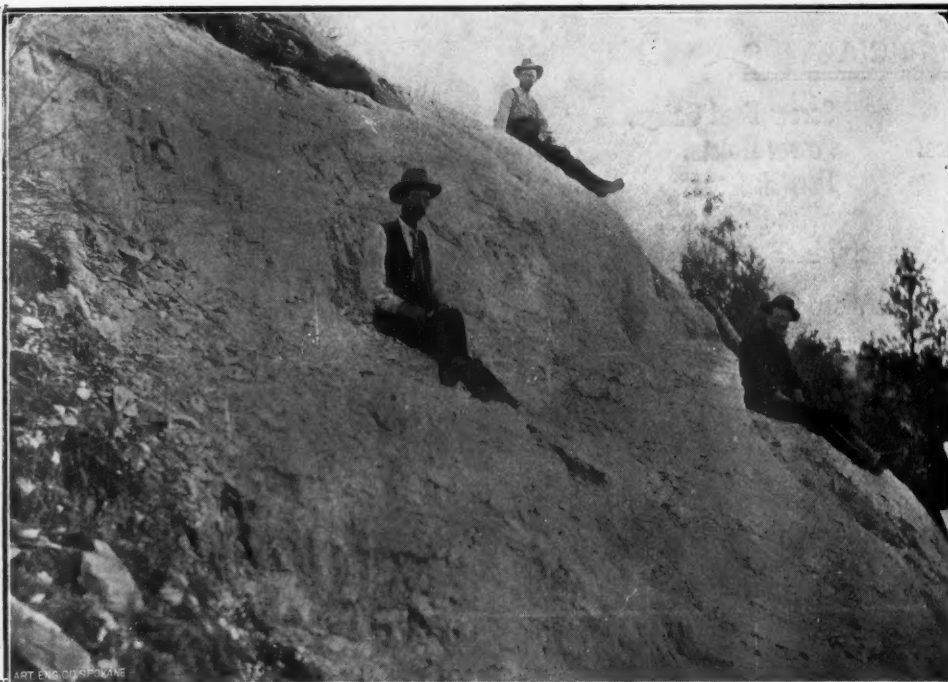
Secretary, . . . J. L. Bishop of Spokane, Wash., also Chief Clerk of the U. S. Marble Co.

Treas. and Gen'l Mgr., Charles E. Mitchell of Spokane, Wash., also Treasurer and General Manager U. S. Marble Co.

All of the above are trustees of the company except the secretary. The additional trustees are: Charles S. Nims of Cedar Falls Iowa, also president of the U. S. Marble company; John C. Kiebler of Spokane, Wash., also attorney for the U. S. Marble company.

The attention of investors is invited to the suares of this company. No safer conditions for investment could be wished. The management of the Columbia River Marble company is in the hands of men who have given years to the marble business in the vicinity of Spokane.

Searching inquiry is invited. Correspondence should be directed to Columbia River Marble Company, Spokane, Wash.



The Columbia River Marble company owns the largest deposit of high grade marble in the United States. The property comprises 62 individual claims or a total of 1230 acres, almost every square foot of which is solid marble showing marketable qualities near the surface. The marble rises in great benches, stands in huge cliffs, spreads itself in broad plateaus.

This property is 100 miles north of Spokane, three miles from the town of Bossburg, and within one mile of the S. F. & N. branch of the Great Northern Railway. The Columbia river flows at the foot of the marble cliff, affording ample mill site, with abundant sand on the banks for marble milling. The railway runs on the opposite bank of the river. A cable tram or a ferry across the Columbia will put the marble directly upon the cars that can go through to the Atlantic seaboard without change. A freight rate that will take this marble in to eastern markets on a competing basis with foreign product has been secured.

The property is so situated that the company will never have to spend a dollar for the building of roads other than those required within the confines of the property itself. Upon the property and in the vicinity there is timber in sufficient quantity to supply the company with packing lumber and fuel for many years to come.

**COLUMBIA RIVER MARBLE CO.. = SPOKANE, WASHINGTON.**

Tell 'em you saw it in ROCK PRODUCTS.



S

Y

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